Digital supplementary material to:

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This supplementary file presents a commented characteristics of biotic and abiotic habitat parameters and of ant species composition and nest density on the study plots. A detailed explanation of recording methods in the field and of data evaluation is given in the source cited above.

Characteristics of 232 study plots investigated from 1979-2015

The German names of the study plots (SP), consisting of locality names and a rough designation of habitat type, were maintained. The value of "habitat size" is an estimate of the total area occupied by the corresponding habitat type in the locality of investigation. The azimuth describing the orientation of a sloping surface follows the astronomical convention (0° = south, 90° = west, 180° = north, 270° = east). The nest densities given are frequently integrated nest density data following the concept of recording groups, pseudoareas, scrutiny search on an S-area, quick search on a Q-area or spot inspection search (see sections 3.1 and 3.2). Accordingly, the data may frequently differ from values expected by simple division of integers by S- or Q-areas. Numbers of found nests with a decimal place (e.g., "4.5", "6.3" or "0.3" nests) sometimes given in the last text segment of a characteristics are explained either by location of a nest just on the borderline of a census area or by supplementations derived from relative forager abundance (see section 3.1). The acronyms have the following meaning (for details on recording see section 3.6)
T_{MAX} maximum calibrated soil temperature in 35 mm depth
T_{MEAN} mean calibrated soil temperature in 35 mm depth
F soil humidity (mean unweighted Ellenberg figure)
R soil calcium (mean unweighted Ellenberg figure)
N nutrient supply (mean unweighted Ellenberg figure)
M mechanical stress on top soil (subjective estimate)
PD phytodensity in the herb layer (cover percentage multiplied by mean height)
S stone density in stones per m²

The fixed investigation protocol included recording the cover percentage of the structural elements tree layer, shrub layer, herb layer, moss and lichen layer, litter layer, dead wood, bare soil and bare rock data are only given if a certain element was present in order to save printing space.

Species without nest findings but with observation of only foraging workers are marked in the species list with "x". If not otherwise stated, the investigator was B. Seifert.

SP 1: Steinkuhlen Trockenrasen

Habitat type: xerothermous limestone grassland
Date of investigation: 24 June 1979, 19 August 1979, 2 August 1980
Situation: Friedrichsaue-1.5 km W (51.8477°N, 11.3240°E, 175 m)
Plot size: S-area 56 m², Q-area 111 m², habitat size: 500 m²
Orography (slope and orientation of surface): 14° SSW
Soil conditions: limestone protosoil with some limestone rubble. Bare stones cover 37% of surface.
Comments: Addition of 4 subareas situated on exposed hill tops, partially enclosed by SP 2. Former quarry shut down several hundred years ago. Sheep pasture for at least hundred years.
Vegetation:
– herb layer (cover 63%):
Euphorbia cyparissias 50, *Thymus serpyllum* 50, *Potentilla tabernaemontani* 15, *Eryngium campestre* 5, *Asperula cynanchica*, *Lotus corniculatus*, *Cirsium acaule*, *Salvia pratensis*, *Plantago media*, *Hieracium pilosella*, *Achillea millefolium*, *Echium vulgare*, *Galium verum*, *Pimpinella saxifraga*, *Seseli hippomarathrum*
– physico-chemical factors, plant and stone density:
T_{MAX} 29.2°C, T_{MEAN} 15.9°C, F (moisture) 2.8, N (nutrients) 2.0, R (Ca^{++}) 7.6, M 4, PD 300, S 20

Ant species	nests / 100 m²
Tetramorium caespitum	59.00
Temnothorax interruptus	50.00
Solenopsis fugax	41.70
Tapinoma subboreale	32.30
Tetramorium impurum	9.80
Lasius alienus	9.50
Myrmica sabuleti	6.80
Formica rufibarbis	5.10
Formica cunicularia	2.10
Anergates atratulus	2.10
Ponera testacea	2.10
Myrmica schencki	1.80
Myrmica specioides	1.80
Lasius niger	0.90
Lasius flavus 15.	0.90
Formica fusca	x
total	225.90

Species richness index S_{100}: 14.76 species/100 m².
Follow-up investigation after 23 years (13 May 2002): during a random collecting**,** largely directed on finding *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium* the following nest numbers were found: 7 *alienus*, 3 *caespitum*, 1 *impurum*, 3 *rufibarbis*, 2 *cunicularia*, 1.3 *specioides*, 1 *sabuleti*, 0.3 *schencki*, 1 *testacea*, x *interruptus*, many *fugax*, x *flavus* **but no** *Tapinoma subboreale*. Sheep pasture was stopped in 1992 but there was removal of bushes and mowing at least once a year. Strong increase of *alienus*, strong decline of *Tetramorium*, extinction of *Tapinoma*.

SP 2: Steinkuhlen Halbtrockenrasen

Habitat type: xerothermous limestone grassland
Date of investigation: 10, 20 and 23 June 1979
Situation: Friedrichsaue-1.5 km W (51.8475°N,11.3239°E), 170 m
Plot size: S-area 88 m², habitat size: 25000 m²
Orography (slope and orientation of surface): 10° SSW
Soil conditions: rendzina with 15 cm Ah horizon on limestone.
Comments: regular sheep pasture in about 3-weeks intervals. Former quarry shut down several hundred years ago. Sheep pasture for at least hundred years.
Vegetation:
– herb layer (cover 95%):
Euphorbia cyparissias, *Thymus serpyllum*, *Potentilla tabernaemontani*, *Eryngium campestre*, *Asperula cynanchica*, *Salvia pratensis*, *Plantago media*, *Hieracium pilosella*, *Briza media*, *Adonis vernalis*, *Potentilla* spec., diverse grasses
– moss and lichen layer (5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 26.50°C, T_{MEAN} 15.34°C, F (moisture) 3.20, N (nutrients) 2.30, R (Ca^{++}) 7.40, M 5, PD 900, S 20

Ant species	nests / 100 m²
Lasius flavus	56.90
Tetramorium caespitum	39.90
Solenopsis fugax	33.00
Myrmica sabuleti	29.60
Tapinoma subboreale	27.30
Temnothorax interruptus	14.80
Tetramorium impurum	6.70
Myrmecina graminicola	5.70
Ponera testacea	3.40
Lasius alienus	2.30
Formica rufibarbis	2.30
Formica cunicularia	2.30
Myrmica scabrinodis	1.10
Myrmica schencki 14.	0.50

total	225.80

Species richness index S_{100}: 13.34 species /100 m². Eveness 0.79
Follow-up investigation after 23 years, 13 May 2002: during a random collecting**,** largely directed on finding *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium* the following nest numbers were found: 34 *alienus*, 5 *caespitum*, 1 *impurum*, 4 *rufibarbis*, 2 *cunicularia*, 4 *sabuleti*, 2 *testacea*, 2 *graminicola*, n *interruptus*, viele *fugax*, n *flavus* **but no** *subboreale*. Sheep pasture was stopped in 1992 but there was removal of bushes and mowing at least once a year. Strong increase of *alienus*, strong decline of *Tetramorium*, vanishing of *Tapinoma*.

SP 3: Steinkuhlen Magerrasen

Habitat type: fresh and meagre grassland on limestone
Date of investigation: 23 June and 21 July 1979
Situation: Friedrichsaue-1.5 km W (51.8475°N, 11.3227°E, 165 m)
Plot size: S-area 50 m², Q-area 500, habitat size: 500 m²
Orography (slope and orientation of surface): 0°
Soil conditions: rendzina on limestone, with 15 cm Ah horizon, top soil not compressed because of very occasional sheep grazing.
Comments: bordering SP 2 in the south. Enclosed in the E, W and S by bushes and trees. Without management. Direct sun-exposure low because of being situated in a trough and being shaded from the south by a wood. Former quarry shut down several hundred years ago.
Vegetation:
– shrub layer (cover 2%, mean height 80 cm):
Crataegus curvisepala
– herb layer (cover 98%):
Cirsium acaule 16, *Galium verum* 16, *Agrimonia eupatorium* 15, *Salvia pratensis* 12, *Knautia arvensis* 8, *Crataegus curvisepala* 8, *Fragaria* spec. 10, *Lotus corniculatus* 5, *Vincetoxicum hirundinaria* 4, *Filipendula vulgaris* 3, *Prunella vulgaris* 2, *Leontodon hispidus* 2, *Eryngium campestre* 1, *Adonis vernalis* 1, *Plantago media* 1, *Dactylis glomerata* 1, *Viola hirta* 1
– moss and lichen layer (cover 10%, mean height 2 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 17.50°C, T_{MEAN} 13.40°C, F (moisture) 3.90, N (nutrients) 3.10, R (Ca^{++}) 7.50, M 2, PD 2300, S 10

Ant species	nests / 100 m²
Lasius alienus	54.00
Myrmica ruginodis	38.00
Lasius flavus	14.00
Myrmica lobicornis	4.00
Myrmica specioides	2.00
Myrmica sabuleti	2.00
Myrmica scabrinodis	2.00
Formica cunicularia	2.00
Formica fusca	2.00
Myrmica rubra	0.6
Formica truncorum 11.	0.2
total	120.8

Species richness index S_{100} : 9.40 species / 100 m².
After 23 years (13 May 2002), SP 3 was fully covered by scrubs and was in the stage of developing into a woodland (Vorwaldstadium) with trees of 6-8 m height.

SP 4: Steinkuhlen, Trockenrasen Südrand, an Acker

Habitat type: xerothermous limestone grassland
Date of investigation: 16 and 17 August 1980
Situation: Friedrichsaue-1.5 km W (51.8472°N, 11.3224°E), 175 m
Plot size: S-area 33 m², Q-area 66 m², habitat size: 700 m²
Orography (slope and orientation of surface): 24° SW
Soil conditions: limestone protosoil
Comments: the study plot is fully isolated from SP 1-3 by a narrow but dense wood and begins 5 m north of intensively managed arable land. Sheep pasturing is mainly in autumn.
Vegetation:
– herb layer (cover 60%):

Euphorbia cyparissias, *Thymus praecox*, *Potentilla* (*tabernaemontani*), *Eryngium campestre*, *Calamintha acinos*, *Hypericum perforatum*, *Euphrasia stricta*, *Salvia pratensis*, *Hieracium pilosella*, *Echium vulgare*, *Galium verum*

– moss and lichen layer (cover 0.1%, mean height 0.5 cm)

– physico-chemical factors, plant and stone density:

T_{MAX} 30.50°C, T_{MEAN} 16.18°C, F (moisture) 2.80, N (nutrients) 2.30, R (Ca^{++}) 7.80, M 2, PD 400, S 2.7

Ant species	nests / 100 m²
Lasius alienus	90.00
Formica fusca	12.00
Lasius flavus	12.00
Solenopsis fugax	9.00
Formica rufibarbis	6.00
Tetramorium caespitum	3.00
Myrmica schencki	3.00
Myrmica specioides	3.00
Temnothorax interruptus	3.00
Myrmecina graminicola	3.00
Lasius jensi 11.	0.80
total	144.80

Species richness index S_{100} : 13.1 species / 100 m².

Despite high similarity in habitat structure to SP 1, the ant assemblage differs strikingly and has a much lower eveness. This is possibly caused by the situation close to managed arable land and lower intensity of sheep pasturing. Follow-up investigation after 22 years (13 May 2002): during a random collecting, largely directed on finding *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium* the following nest numbers were found: 27 *alienus*, 1 *jensi* x *umbratus*, 2.6 *specioides*, 2 *graminicola*, x *interruptus*, many *fugax*, x *flavus*. Sheep pasturing was abandoned in about 1992. The plot showed only weak development of scrubs in 2002 but a higher and denser herb layer compared to 1980.

SP 5: Zscheiplitz, Halbtrockenrasen am Südhang

Habitat type: xerothermous limestone grassland

Date of investigation: 20 August 1980, 8 September 1981

Situation: Zscheiplitz-0.5 km SW (51.2130°N, 11.7368°E), 140 m, vic. Freyburg

Plot size: S-area 68 m², Q-area 176 m², habitat size 4 ha

Orography (slope and orientation of surface): 16° SE

Soil conditions: loess-rendzina with 15-20 cm Ah horizon over shell limestone.

Comments: sheep pasturing abandoned or only occasional, beginning development of scrubs.

Vegetation:

– shrub layer (cover 8%, 80 cm):

Crataegus monogyna, *Rosa* spec., *Cornus sanguinea*

– herb layer (cover 90%):

Euphorbia cyparissias, *Origanum vulgare*, *Thymus serpyllum*, *Potentilla* spec., *Lotus corniculatus*, *Cirsium acaule*, *Fragaria viridis*, *Carlina vulgaris*, *Achillea millefolium*, *Scabiosa ochroleuca*, *Agrimonia eupatorium*, *Gentianella ciliata*, *Coronilla varia*, *Salvia pratensis*, *Hieracium pilosella*

– moss and lichen layer (3%)

– physico-chemical factors, plant and stone density:

T_{MAX} 27.40°C, T_{MEAN} 15.95°C, F (moisture) 3.40, N (nutrients) 3.00, R (Ca^{++}) 7.70, M 2, PD 1000, S 0.4

Ant species	nests / 100 m²
Lasius alienus	58.80
Solenopsis fugax	26.50
Myrmica sabuleti	17.6
Lasius myops	13.2
Tetramorium caespitum	3.70
Formica cunicularia	2.90
Myrmica specioides	2.20
Formica rufibarbis	1.70
Formica fusca	1.70
Lasius jensi	1.50
Temnothorax albipennis	1.50

Myrmecina graminicola	1.50
Myrmica schencki	1.50
Polyergus rufescens	0.80
Myrmica hirsuta	0.70
Formica clara 16.	0.40
total	136.20

Species richness index S_{100}: 15.76 species / 100 m².
Densities of most species were under-recorded.

SP 6: Balgstädt, ehemaliger Steinbruch

Habitat type: xerothermous limestone grassland
Date of investigation: 21 August 1980 and 30 August 1981
Situation: Balgstädt-0.6 km N (51.2096°N,11.7333°E), 130 m
Plot size: S-area 33 m², Q-area 200 m², habitat size: 500 m²
Orography (slope and orientation of surface): 0°
Soil conditions: limestone protosoil consisting of only 3 cm of a weakly humous Ah horizon with much fine gravel and loose stones, at spots 7 cm deep, directly below the bedrock of shell limestone.
Comments: horizontal terrace excavated in a steep S-facing slope, wind screened. Former quarry, shut down before 1950.
Vegetation:
– shrub layer (cover 6%, 80 cm):
Rosa spec., *Cornus sanguinea*
– herb layer (cover 45%):
Thymus praecox and *T. pulegioides* together 10, *Potentilla* spec.10, *Seseli hippomarathrum* 3, *Teucrium montanum* 3, *Teucrium chamaedrys* 3, *Pimpinella saxifraga* 1, *Fumana procumbens* 3, *Sesleria albicans*, *Vincetoxicum hirundinaria*, *Echium vulgare*, *Euphrasia stricta*, *Fragaria* spec.
– moss and lichen layer (20%)
– physico-chemical factors, plant and stone density:
T_{MAX} 29.30°C, T_{MEAN} 16.42°C, F (moisture) 2.50, N (nutrients) 1.30, R (Ca^{++}) 8.20, M 1, PD 350, S 20

Ant species	nests / 100 m²
Myrmica sabuleti	27.30
Solenopsis fugax	24.20
Tetramorium caespitum	24.20
Myrmica specioides	16.70
Lasius flavus	9.10
Temnothorax interruptus	6.10
Lasius alienus	6.10
Temnothorax unifasciatus	3.00
Temnothorax tuberum	3.00
Ponera coarctata	3.00
Myrmecina graminicola	3.00
Plagiolepis vindobonensis	3.00
Formica cunicularia	3.00
Formica fusca	3.00
Formica rufibarbis	0.50
Lasius emarginatus 16.	0.50
total	135.70

Species richness index S_{100} : 15.99 species /100 m².

SP 7: Zscheiplitz Seslerietum

Habitat type: xerothermous grassland on limestone, Teucrio-Seslerietum
Date of investigation: 22 August 1980
Situation: Zscheiplitz-Kirche-0.35 km SW (51.2107°N, 11.7313°E), 185 m
Plot size: S-area 50 m², Q-area 200 m², habitat size: 3000 m²
Orography (slope and orientation of surface): 31° SSW
Soil conditions: 30 cm of a coarse-sandy loess layer over bedrock of shell limestone.
Comments: the plots is situated a little lower than the upper edge of the slope and is strongly wind-exposed.

Vegetation:
– shrub layer (cover 2%, mean height 130 cm):
Cornus sanguinea
– herb layer (cover 55%):
Sesleria albicans, *Reseda luteola*, *Cotoneaster itegerrimus*, *Thalictrum minus*, *Cynanchum vincetoxicum*, *Anthericium liliago*, *Salvia pratensis*, *Epipactis atrorubens*, *Fumana procumbens*, *Carex humilis*, *Cuscuta epithymum*, *Seseli hippomarathrum*, *Bupleurum falcatum*, *Teucrium chamaedrys*, *Teucrium montanum*, *Thymus praecox*, *Thymus serpyllum*, few *Euphorbia cyparissias*, *Festuca rupicola*, *Stipa pulcherrima*
– moss and lichen layer (cover 0.5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 29.30°C, T_{MEAN} 16.20°C, F (moisture) 2.63, N (nutrients) 2.10, R (Ca^{++}) 7.63, M 1, PD 1000, S 16

Ant species	nests / 100 m²
Tetramorium caespitum	17.00
Lasius myops	14.00
Tapinoma subboreale	14.00
Plagiolepis vindobonensis	10.00
Myrmica specioides	8.00
Myrmica sabuleti	5.40
Lasius alienus	4.60
Temnothorax unifasciatus	4.00
Formica cunicularia	2.50
Temnothorax albipennis	2.00
Tapinoma erraticum	2.00
Ponera coarctata	2.00
Solenopsis fugax	2.00
Formica rufibarbis	0.50
Formica clara 15.	0.50
total	88.50

Species richness index S_{100}: 14.13 species /100 m².

SP 8: Tote Täler, Kalksteinbruch
Habitat type: xerothermous limestone grassland
Date of investigation: 23 August 1980 and 6 September 1981
Situation: Grosswilsdorf-1.2 km ESE, 51.1813°N, 11.7318°E, 120 m
Plot size: S-area 56 m², habitat size: 120 m²
Orography (slope and orientation of surface): 0
Soil conditions: protosoil with very thin Ah horizon on shell limestone.
Comments: former quarry at the foot of a steep south-facing slope.
Vegetation:
– shrub layer (cover 0.5%):
Rosa spec.
– herb layer (cover 30%):
Fragaria viridis, *Thymus praecox*, *Thymus serpyllum*, *Teucrium chamaedrys*, *Potentilla* spec. (*verna*-group), *Teucrium montanum*, *Hieracium pilosella*, *Euphorbia cyparissias*
– moss and lichen layer (cover 25%)
– physico-chemical factors, plant and stone density:
T_{MAX} 29.90°C, T_{MEAN} 16.62°C, F (moisture) 2.25, N (nutrients) 1.88, R (Ca^{++}) 7.83, M 2, PD 100, S 15

Ant species	nests / 100 m²
Temnothorax unifasciatus	30.00
Tapinoma erraticum	21.00
Temnothorax interruptus	20.40
Temnothorax tuberum	12.00
Myrmica specioides	10.70
Temnothorax albipennis	10.00
Lasius myops	5.80
Solenopsis fugax	5.00
Lasius alienus	3.60

Myrmoxenus ravouxi	3.60
Formica cunicularia	3.60
Formica rufibarbis	3.60
Formica fusca	3.60
Myrmecina graminicola	2.70
Lasius jensi	1.80
Lasius reginae	1.80
Myrmica schencki	1.80
Tetramorium caespitum 18.	1.80
total	142.80

Species richness index S_{100} 19.18 species / 100 m².
During a visit at 14 June 2002, the plot was fully overgrown by a thick moss layer and shaded by a 10-meters high upgrowth of trees at the southern margin of the plot. Number of nests found: *M. specioides* 16.3, *T. erraticum* 9.3, *Myrmica rubra* 2, *T. interruptus* 5, *Myrmecina graminicola* 3, *Tapinoma subboreale* 1, *Lasius niger* 5, *T. tuberum* 2, *T. caespitum* 1, *F. cunicularia* 3, *F. fusca* 2, *F. rufibarbis* 1, *L. alienus* 2, *M. sabuleti* 0.3, *T. albipennis* 1, *P. coarctata* 1.

SP 9: Kalktrockenrasen im Hochplateau Zscheiplitz
Habitat type: xerothermous limestone grassland
Date of investigation: 31 August 1981 and 1 September 1981
Situation: Zscheiplitz-Kirche-0.5 km WNW, 11.7280°E, 51.2152°N, 190 m
Plot size: S-area 40 m², Q-area 150 m², habitat size: 3000 m²
Orography (slope and orientation of surface): 3° ESE
Soil conditions: rendzina developing on a planar deposition of tailings / rubble of a former shell limestone quarry. Mean thicknes of Ah horizon 10 cm (in clefts reaching deeper), tailings about 3 metres deep. Bare limestone covering 20% of soil surface. The rubble contains some red sandstone.
Comments: Occasional sheep pasture.
Vegetation:
– shrub layer (cover 3%):
Rosa spec. 5, *Cornus sanguinea* 1
– herb layer (cover 56%):
Festuca ovina, *Arrhenaterum elatius*, *Linum catharticum*, *Bupleurum falcatum*, *Medicago luppulina*, *Arabis hirsuta*, *Achillea millefolium*, *Lotus corniculatus*, *Hypericum perforatum*, *Euphrasia stricta*, *Sedum acre*, *Briza media*, *Anthyllis vulneraria*, *Sanguisorba minor*, *Potentilla tabernaemontani*, *Polygala comosa*, *Origanum vulgare*, *Hieracium pilosella*, *Gentianella ciliata*, *Fragaria viridis*, *Vincetoxicum hirundinaria*, *Carlina vulgaris*, *Cirsium acaule*, *Thymus praecox*
– moss and lichen layer (48%)
Cladonia spec.,
– physico-chemical factors, plant and stone density:
T_{MAX} 27.90°C, T_{MEAN} 15.74°C, F (moisture) 3.17, N (nutrients) 2.60, R (Ca^{++}) 7.53, M 3, PD 500, S 15

Ant species	nests / 100 m²
Solenopsis fugax	92.50
Lasius flavus	54.20
Tetramorium caespitum	38.80
Temnothorax tuberum	37.00
Tetramorium impurum	30.00
Tapinoma subboreale	19.20
Temnothorax albipennis	13.00
Myrmica sabuleti	8.00
Plagiolepis vindobonensis	7.50
Ponera coarctata	7.50
Temnothorax interruptus	7.50
Lasius alienus	2.50
Myrmecina graminicola	2.50
Temnothorax unifasciatus	2.05
Formica rufibarbis	1.50
Formica cunicularia	1.11
Myrmica schencki	0.80
Camponotus ligniperda	0.80

Polyergus rufescens	19.	0.70
total		327.16

Species richness index S_{100} 18.83 species / 100 m².
Note the extremely different ant assemblage of the immediately bordering, less dry SP 10. During a follow-up investigation 14 June 2002 (after 21 years), the habitat structure was largely unchanged. Found were: 8 *S. fugax*, 6.7 *L. flavus*, 3 *T. albipennis*, 9.3 *T. caespitum*, 4.7 *T. subboreale*, 8 *T. tuberum*, 1 *F. rufibarbis*, 1 *F. cunicularia*, 1 *Polyergus*, 1 *T. interruptus*, 3 *M. sabuleti*, 0.3 *M. schencki*, 1 *L. alienus*.

SP 10: Rinne im Hochplateau Zscheiplitz
Habitat type: xerothermous limestone grassland
Date of investigation: 1 and 2 September 1981
Situation: Zscheiplitz-Kirche 0.4 km W, 11.72709°E, 51.21477°N, 190 m
Plot size: S-area 24 m², Q-area 80 m², habitat size: 100 m²
Orography (slope and orientation of surface): 0° ESE
Soil conditions: rendzina on shell limestone. Mean thicknes of Ah horizon 15 cm. Big flat limestone plates cover 10% of soil surface.
Comments: The plot is at the botttom of a 3 m deep, at the upper margin 6-7 m wide trench, running from ENE to WSW and is situated immediately south of SP 9. It is moister and less sun-exposed than SP 9.
Vegetation:
– shrub layer (cover 15%):
Rosa spec.
– herb layer (cover 76%):
Hieracium pilosella, *Lotus corniculatus*, *Vincetoxicum hirundinaria*, *Bupleurum falcatum*, *Potentilla tabernaemontani*, *Achillea millefolium*, *Trifolium dubium*, *Trifolium campestre*, *Briza media*, *Arrhenaterum elatius*, *Origanum vulgare*, *Gentianella ciliata*, *Thymus praecox*, *Cirsium acaule*, *Plantago media*, *Fragaria viridis*, *Carlina vulgaris*, *Inula conyza*, *Hypericum perforatum*, *Linum catharticum*, *Rumex acetosa*
– moss and lichen layer (25%)
– physico-chemical factors, plant and stone density:
T_{MAX} 22.40°C, T_{MEAN} 14.53°C, F (moisture) 3.50, N (nutrients) 3.00, R (Ca^{++}) 7.50, M 3, PD 1000, S 16

Ant species	nests / 100 m²
Myrmica sabuleti	91.70
Temnothorax tuberum	65.60
Lasius flavus	54.20
Myrmica hirsuta	37.50
Temnothorax albipennis	21.90
Ponera coarctata	20.80
Myrmecina graminicola	16.70
Camponotus ligniperda	8.30
Solenopsis fugax	8.30
Temnothorax interruptus	8.30
Tapinoma subboreale	7.10
Lasius alienus	5.40
Tetramorium caespitum	2.10
Formica cunicularia	1.50
Formica rufibarbis 15.	1.25
total	350.65

Species richness index S_{100} 16.85 species / 100 m².
The very strong difference in the density of *M. sabuleti* of 11.5 : 1 is explained by the island effect of the more biomass-rich and tempered trench within a poor and hot environment. *M.hirsuta* parasitizes nearly half o the *sabuleti* nests. During a follow-up investigation 14 June 2002 (after 21 years) the habitat structure was largely unchanged. Found were: 5 *L. flavus*, 4 *M. sabuleti*, 3 *T. tuberum*, 3 *P. coarctata*, 2 *Myrmecina graminicola*, 1.7 *T. subboreale*, 1.3 *L. alienus*, 1 *T. albipennis*, 1 *F. rufibarbis*, 1 *F. cunicularia*, 1 *T. interruptus*, 1 *S. fugax*.

SP 11: Umgebrochener Halbtrockenrasen auf Plateau bei Zscheiplitz

Habitat type: fallow of a formerly ploughed mesoxerophytic limestone grassland
Date of investigation: 3 September 1981
Situation: Zscheiplitz-0.7 km W, 51.2167°N, 11.7243°E, 190 m
Plot size: S-area 30 m², habitat size: 5000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: 30 cm thick Ah horizon with loess over shell limestone, superficially slightly condensed.
Comments: The plot was once ploughed in perhaps 1975, resulting in a haulage of numerous stones to soil surface and in an extreme structural difference to the adjacent, unploughed SP 12. The ploughing attempt was given up very soon because of the too shallow soil with too much skeletal elements. In 1981, there was no recovery of an intact turf and grasses formed only a small percentage of herb layer.
Vegetation:
– shrub layer (cover 15%, mean height 80 cm):
Rosa spec. 15
– herb layer (cover 85%):
Carlina vulgaris 5, *Carlina acaulis* 3, *Thymus* spec. 30, *Inula conyza* 20, *Salvia pratensis* 20, *Teucrium chamaedrys* 8, *Arrhenaterum elatius* 8, *Potentilla* (*verna*-group) 5, *Asperula cynanchica* 3, *Euphorbia cyparisias* 3, *Hieracium pilosella* 1, *Plantago media* 1
– moss and lichen layer (0%)
– physico-chemical factors, plant and stone density:
T_{MAX} 26.70°C, T_{MEAN} 15.48°C, F (moisture) 3.60, N (nutrients) 3.20, R (Ca^{++}) 7.60, M 3, PD 750, S 25

Ant species	nests / 100 m²
Tetramorium caespitum	57.60
Lasius flavus	50.00
Myrmica specioides	43.30
Ponera coarctata	30.00
Lasius alienus	16.70
Myrmica sabuleti	6.70
Myrmecina graminicola	6.70
Lasius niger	3.30
Tapinoma subboreale	3.30
Lasius umbratus 10.	3.30
total	220.90

Species richness index S_{100} 13.07 species / 100 m².
Ant assemblage very different from adjacent SP 12.

SP 12: Schafweide auf Plateau bei Zscheiplitz

Habitat type: sheep pasture in a limestone grassland
Date of investigation: 4 September 1981
Situation: Zscheiplitz-0.7 km W, 51.2167°N, 11.7244°E, 190 m
Plot size: S-area 25 m², habitat size: 2 ha
Orography (slope and orientation of surface): 0°
Soil conditions: 30 cm thick Ah horizon with loess over shell limestone, superficially condensed.
Comments: Sheep pasture in weekly intervals. Grasses remain low (2 cm), but very dense. The few stones still present at soil surface are usually sunken. Directly adjacent to SP 11.
Vegetation:
– shrub layer (cover 2%:
Rosa spec.
– herb layer (cover 100%):
diverse grasses (*Arrhenaterum elatius*) 60, *Thymus* spec. 50, *Teucrium chamaedrys* 40, *Plantago media* 15, *Carlina vulgaris* 5, *Carlina acaulis* 10, *Asperula cynanchica* 5, *Scabiosa ochroleuca* 5, *Gentianella ciliata* 3, *Lotus corniculatus* 2, *Campanula* spec. 5
– moss and lichen layer (15%)
– physico-chemical factors, plant and stone density:
T_{MAX} 23.90°C, T_{MEAN} 14.86°C, F (moisture) 3.60, N (nutrients) 3.20, R (Ca^{++}) 7.70, M 5, PD 400, S 2

Ant species	nests / 100 m²
Lasius flavus	56.00

Myrmica specioides		48.00
Tapinoma subboreale	3.	4.00
total		108.00

Species richness index S_{100} 4.11 species / 100 m².

SP 13: Halbtrockenrasen bei Weischütz

Habitat type: mesoxerophytic grassland on limestone
Date of investigation: 5 September 1981
Situation: Weischütz-1 km NE, 51.2266°N,11.7230°E, 200 m
Plot size: S-area 20 m², Q-area 100 m², habitat size: 2 ha
Orography (slope and orientation of surface): 6° SE
Soil conditions:
Renzina with much loess and shallow Ah horizon on shell limestone.
Comments:
Occasional sheep pasture.
Vegetation:
– shrub layer (cover 2%, mean height 1.5 m):
Rosa spec. 5
– herb layer (cover 95%):
Festuca ovina aggr. 20, *Teucrium chamaedrys* 20, *Arrhenaterum elatius* 25, *Euphorbia cyparissias* 15, *Gentianella ciliata* 3, *Agrimonia eupatorium*, *Thymus* spec., *Potentilla* cf. *verna*, *Carlina acaulis*, *Carlina vulgaris*, *Campanula* spec., *Asperula cynanchica*, *Knautia arvensis*, *Scabiosa ochroleuca*, *Eryngium campestre*, *Salvia pratensis*
– moss and lichen layer (3%)
– physico-chemical factors, plant and stone density:
T_{MAX} 23.90°C, T_{MEAN} 14.86°C, F (moisture) 3.60, N (nutrients) 3.20, R (Ca^{++}) 7.70, M 5, PD 400, S 2.0

Ant species		nests / 100 m²
Lasius flavus		40.00
Lasius alienus		40.00
Myrmica sabuleti		25.00
Tetramorium caespitum		25.00
Myrmica specioides		10.00
Lasius jensi		5.00
Solenopsis fugax		5.00
Tapinoma subboreale		5.00
Formica cunicularia		3.00
Formica rufibarbis	10.	1.00
total		159.00

Species richness index S_{100} : 11.56 species / 100 m².

SP 14: Halbtrockenrasen bei Günserode

Habitat type: mesoxerophytic grassland on limestone
Date of investigation: 31 May 1983 and 2 June 1983
Situation: Günserode-Kirche-0.7 km N, 51.3140°N, 11.0479°N, 240 m
Plot size: S-area 40 m², Q-area 200 m², habitat size: 5000 m²
Orography (slope and orientation of surface): 17° S
Soil conditions:
Rendzina (Germ.: Decklöss-Fahlerde-Rendzina) with 20 cm Ah horizon over shell limestone.
Comments: Obviously no longer used. The plot is situated at the upper part of a steep slope in transition to the plateau and adjacent to SP 15.
Vegetation:
– shrub layer (cover 5%):
Crataegus spec., *Prunus spinosa*, *Rosa* spec., *Viburnum lantana*
– herb layer (cover 95%):
Carex humilis 125, *Anthericium liliago* 30, *Inula hirta* 19, *Thalictrum minus* 18, *Euphorbia cyparissias* 15, *Lotus corniculatus* 13, *Salvia pratensis* 11, *Bupleurum falcatum* 6, *Sanguisorba minor* 3, *Eryngium campestre* 4, *Cirsium acaule* 2, *Polygonatum odoratum* 2, *Orchis militaris*, *Orchis purpurea*, *Orchis ustulata*, *Orchis* spec., *Ophrys insectifera* (alle zusammen 5), *Carlina vulgaris* 1, *Hieracium pilosella* 0.5, *Achillea millefolium* 0.5, *Hypericum perforatum* 0.2.

– moss and lichen layer (25%)
– physico-chemical factors, plant and stone density:
T_{MAX} 26.40°C, T_{MEAN} 15.16°C, F (moisture) 3.40, N (nutrients) 2.89, R (Ca^{++}) 7.86, M 2, PD 1400, S 0.15

Ant species	nests / 100 m²
Tapinoma erraticum	31.60
Solenopsis fugax	29.00
Formica cunicularia	23.20
Temnothorax interruptus	22.70
Myrmica sabuleti	15.20
Lasius myops	7.60
Lasius alienus	5.10
Formica rufibarbis	4.60
Myrmecina graminicola	2.50
Lasius jensi	1.20
Temnothorax affinis	1.00
Tapinoma subboreale	0.50
Lasius niger	0.50
Formica pratensis 14.	0.50
total	145.20

Species richness index S_{100} 12.26 species / 100 m².
F. pratensis: young foundation at *F. cunicularia. T. affinis*: in each old *Crataegus* at least one nest. An inspection after 19 years (13 June 2002) revealed scrub encroachment on 50% of the plot area.

SP 15: Trockenrasen bei Günserode

Habitat type: xerothermous grassland on shell limestone
Date of investigation: 9 September 1981, 30 May–1 June 1983
Situation: Günserode-Kirche-0.7 km N, 51.3135°N, 11.0474°E, 225 m
Plot size: S-area 95 m², Q-area 200 m², habitat size: 1 ha
Orography (slope and orientation of surface): 28° S
Soil conditions: Protosoil on shell limestone without Ah horizon. The upper 10 cm are a mixture of loess and limestone rubble.
Comments: The plot is not under any human use. Due to extremely xerothermous conditions and humus deficiency, there is no plant succession in the medium term. Growth and death of the few scrubs are in an equilibrium.
Vegetation:
– shrub layer (cover 3%):
Crataegus spec., *Rosa* spec., *Viburnum lantana*
– herb layer (cover 30%):
Anthericium liliago 200, *Teucrium chamaedrys* 80, *Teucrium montanum* 1, *Bupleurum falcatum* 1, *Gentianella ciliata* 1, *Euphorbia cyparissias* 1, *Thalictrum minus* 10, *Salvia pratensis* 2, *Lotus corniculatus* 1, *Orchis militaris*, *Orchis ustulata*, *Orchis* spec., *Fumana procumbens* 1, *Sanguisorba minor* 0.5, *Thymus praecox*, *Hypericum perforatum*, *Cirsium acaule*, *Carlina vulgaris*, *Hieracium pilosella*
– moss and lichen layer (0.5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 31.60°C, T_{MEAN} 16.30°C, F (moisture) 2.90, N (nutrients) 2.29, R (Ca^{++}) 8.00, M 1, PD 400, S 40

Ant species	nests / 100 m²
Tapinoma erraticum	33.30
Lasius myops	15.50
Myrmecina graminicola	12.60
Lasius alienus	8.00
Solenopsis fugax	9.50
Temnothorax unifasciatus	6.60
Temnothorax albipennis	5.30
Temnothorax interruptus	3.20
Lasius reginae	2.10
Formica cunicularia	2.10
Camponotus piceus	2.10

Temnothorax affinis	1.40
Ponera spec.	1.10
Lasius emarginatus	1.10
Myrmica sabuleti	0.50
Myrmica specioides 16.	0.30
total	104.70

Species richness index S_{100} : 14.27 species / 100 m².
T. affinis: at each old *Crataegus* at least one nest. The plot appeared structurally unchanged during an inspection after 19 years (13 June 2002).

SP 16: Magerrasen bei Günserode

Habitat type: mesoxerophytic grassland on shell limestone
Date of investigation: 9 September 1981
Situation: Günserode-0.6 km N, 51.3116°N, 11.0517°E, 205 m, vic. Artern
Plot size: S-area 20 m², Q-area 40 m², habitat size: 200 m²
Orography (slope and orientation of surface): 15° SW
Soil conditions: Deckloess-rendzina over shell limestone with more than 20 cm Ah horizon.
Comments: the plot is situated SW of a scrub.
Vegetation:
– herb layer (cover 95%):
Trifolium pratense, *Euphrasia stricta*, *Dactylis glomerata*, *Leontodon* spec., *Cirsium acaule*, *Bupleurum falcatum*, *Euphorbia cyparissias*, *Carlina vulgaris*, *Prunella vulgaris*, *Briza media*, *Rosa* spec.
– moss and lichen layer (15%)
– physico-chemical factors, plant and stone density:
T_{MAX} 27.00°C, T_{MEAN} 15.34°C, F (moisture) 3.70, N (nutrients) 2.60, R (Ca^{++}) 7.00, M 2, PD 1000, S 5.0

Ant species	nests / 100 m²
Lasius alienus	70.00
Solenopsis fugax	45.00
Camponotus ligniperda	15.00
Lasius reginae	10.00
Lasius flavus	10.00
Myrmica sabuleti	10.00
Lasius niger	5.00
Myrmecina graminicola	5.00
Myrmica schencki	5.00
Formica rufibarbis	5.00
Myrmica specioides 11.	2.50
total	182.50

Species richness index S_{100} : 13.99 species / 100 m².

SP 17: Büsche auf Trockenrasen bei Heimburg

Habitat type: scrub area within a xerothermous limestone grassland
Date of investigation: B. Seifert 3 and 4 October 1980
Situation: Heimburg 1.3 km WNW, 51.8264°N, 10.8927°E, 260 m
Plot size: S-area 25 m², Q-area 100 m², habitat size: 500 m²
Orography (slope and orientation of surface): SSW 20°
Soil conditions: the A horizon is a weakly humous layer of limestone rubble plus loess over shell limestone.
Comments: the plot is an addition of 6 separate subareas.
Vegetation:
– shrub layer (cover 30%, mean height1.5 m):
Crataegus spec., *Rosa* spec.
– herb layer (cover 50%):
Linum leonii, indet. Gras, *Cirsium acaule*, *Carlina vulgaris*, *Pimpinella saxifraga* (dominant), *Hieracium pilosella*, *Thymus* spec., *Potentilla* (*verna*-group), *Asperula cynanchica*, *Campanula rotundifolia*, *Euphorbia cyparissias*, *Gentianella ciliata*, *Viola* spec.
– moss and lichen layer (40%, 3 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 22.70°C, T_{MEAN} 13.83°C, F (moisture) 3.30, N (nutrients) 2.20, R (Ca^{++}) 8.00, M 3, PD 1900, S 40

Ant species	nests / 100 m²
Temnothorax unifasciatus	96.00
Lasius flavus	36.00
Tetramorium impurum	28.00
Myrmicina graminicola	24.00
Lasius alienus	16.00
Lasius paralienus	16.00
Ponera coarctata	16.00
Tapinoma erraticum	16.00
Temnothorax interruptus	8.00
Formica cunicularia	2.70
Myrmica sabuleti	3.00
Formica rufibarbis	1.30
Formica fusca 13.	1.00
total	264.00

Species richness index S_{100} : 14.04 species / 100 m².
A follow-up inspection after 22 years (14 May 2002), recording mainly *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium*, found a rather unchanged structure of the plot and resulted in following nest findings: 1 *erraticum*, 6 *alienus*, 6 *paralienus*, 1 *rufibarbis*, 1 *cunicularia*. Sheep pasturing was still run in 2002.

SP 18: Trockenrasen bei Heimburg
Habitat type: xerothermous limestone grassland
Date of investigation: 19 September 1980
Situation: Heimburg 1.3 km WNW, 51.8264°N, 10.8927°E, 260 m
Plot size: S-area 25 m², Q-area 50 m², habitat size: 4 ha
Orography (slope and orientation of surface): SSW 18°
Soil conditions: 15-25 cm Ah horizon with loess and much limestone rubble over shell limestone.
Comments: In 1980 weak sheep pasturing.
Vegetation:
– shrub layer (cover 3%,mean height 0.8 m):
Crataegus spec., *Rosa* spec.
– herb layer (cover 95%):
Linum leonii, indet. grasses (main part of vegetation), *Cirsium acaule*, *Carlina vulgaris*, *Pimpinella saxifraga*, *Hieracium pilosella*, *Thymus pulegioides*, *Potentilla* (*verna*-group), *Asperula cynanchica*, *Campanula rotundifolia*, *Euphorbia cyparissias*, *Gentianella ciliata*
– moss and lichen layer (3%, 3 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 24.70°C, T_{MEAN} 14.18°C, F (moisture) 3.30, N (nutrients) 2.40, R (Ca^{++}) 8.20, M 3, PD 1300, S 20

Ant species	nests / 100 m²
Lasius flavus	56.50
Lasius alienus	49.90
Tetramorium impurum	30.40
Tapinoma erraticum	30.40
Lasius paralienus	29.70
Temnothorax unifasciatus	8.70
Myrmica sabuleti	6.50
Myrmecina graminicola	4.30
Lasius niger	2.30
Myrmica schencki	0.70
Formica sanguinea 11.	0.50
total	219.90

Species richness index S_{100} : 11.44 species / 100 m².
A follow-up inspection after 22 years (14 May 2002), recording mainly *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium*, found a rather unchanged structure and resulted in the following nest findings: 2 *coarctata*, 0.3 *sabuleti*, 2 *graminicola*, 2 *impurum*, 1.3 *erraticum*, 11.6 *alienus*, 5.3 *paralienus*, 1 *rufibarbis*, 1 *cunicularia*, 1 *niger*, 1 *unifasciatus*. Sheep grazing is going on.

SP 19: Halbtrockenrasen Benzingerode

Habitat type: mesoxerophytic grassland on limestone
Date of investigation: September 1980
Situation: Benzingerode-1.6 km WNW, 51.8394°N, 10.8479°E, 250 m, vic. Wernigerode
Plot size: S-area 57 m², Q-area 100 m², habitat size: 4 ha
Orography (slope and orientation of surface): SSW 18°
Soil conditions: loess rendzina with 20 cm Ah -horizon over shell limestone.
Comments: There was only little sheep grazing in the year 1980.
Vegetation:
– shrub layer (cover 2%, mean height 1 m):
Rosa canina
– herb layer (cover 100%):
Linum catharticum 3, *Euphorbia cyparissias* 3, *Cirsium acaule* 2, *Pimpinella saxifraga* 2, *Carlina vulgaris* 2, *Rosa canina*, *Hypericum perforatum*, *Scabiosa canescens*, *Bupleurum falcatum*, *Campanula rotundifolia*, *Plantago media*, *Hieracium pilosella*, *Thymus pulegioides*, *Potentilla* (*verna*-group), *Lotus corniculatus*, *Agrimonia euptorium*
– moss and lichen layer (2%)
– physico-chemical factors, plant and stone density:
T_{MAX} 24.00°C, T_{MEAN} 14.12°C, F (moisture) 3.50, N (nutrients) 2.20, R (Ca^{++}) 8.00, M 3, PD 1300, S 15

Ant species	nests / 100 m²
Tapinoma erraticum	57.80
Lasius alienus	26.20
Myrmica sabuleti	13.10
Formica cunicularia	4.70
Formica rufibarbis	2.30
Tetramorium impurum	1.70
Lasius flavus	1.70
Ponera coarctata	1.70
Myrmecina graminicola 9.	1.00
total	110.20

Species richness index S_{100} 9.00 species / 100 m² (f-Fl 8, g-Fl 9).
A follow-up inspection after 22 years (14 May 2002), recording mainly *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium*, found a rather unchanged structure and resulted in the following nest findings: 23.6 *erraticum*, 13.7 *alienus*, 3.7 *sabuleti*, 2.3 *niger*, 3 *rufibarbis*, 2 *cunicularia*, 2 *coarctata*, 1 *graminicola*. Removal of scrubs was done and sheep grazing is going on.

SP 20: Kalktrockenrasen im Huy, nahe der Paulskopfwarte

Habitat type: xerothermous grassland on limestone
Date of investigation: 3 August 1980
Situation: Sargstedt-3.5 ENE, 51.9561°N, 11.0297°E, 260 m
Plot size: S-area 17 m², Q-area 50 m², habitat size: 900 m²
Orography (slope and orientation of surface): 4° S
Soil conditions: protosoil over shell limestone, in patches a thin Ah horizon (protorendzina to rendzina)
Comments: a small open area of 900 m² in a forest.
Vegetation:
– herb layer (cover 60%):
Geranium sanguineum (eudominant), in smaller number: *Fragaria* spec., *Salvia pratensis*, *Hieracium pilosella*, *Euphorbia cyparissias*, *Potentilla* (*verna*-group), *Thymus pulegioides*, *Agrimonia eupatorium*, *Campanula rotundifolia*, *Bupleurum falcatum*, *Senecio erucifolius*, *Scabiosa ochroleuca*, *Genista tinctoria*
– moss and lichen layer (0%)
– physico-chemical factors, plant and stone density:
T_{MAX} 27.20°C, T_{MEAN} 14.58°C, F (moisture) 3.30, N (nutrients) 2.90, R (Ca^{++}) 8.10, M 2, PD 450, S 13

Ant species	nests / 100 m²
Tetramorium caespitum	93.60
Lasius alienus	50.80
Lasius flavus	26.90
Temnothorax unifasciatus	23.90

Tapinoma erraticum		23.90
Myrmica specioides		6.00
Lasius niger		6.00
Formica rufibarbis		3.00
Myrmica sabuleti		3.00
Myrmica schencki	10.	2.00
total		239.10

Species richness index S_{100} : 11.90 species / 100 m².

SP 21: Kalktrockenrasen Quenstedt

Habitat type: xerothermous grassland on limestone
Date of investigation: 5 August 1979
Situation: Quenstedt-1.4 kmE, 51.7065°N, 11.4689°E,160 m, vic. Hettstedt
Plot size: S-area 15 m², habitat size: 300 m²
Orography (slope and orientation of surface): 35° SSW
Soil conditions: protosoil on shell limestone with a shallow, loamy top layer of fine ruble and stones
Comments: Area of ancient limestone mining that caused deep pits steep abruptions. The plot is on the undestroyed slope at southern margin of the area.
Vegetation:
– herb layer (cover 38%):
Thymus spec. 90 (in large and dense pads), *Festuca ovina* aggr. 8, *Euphorbia cyparissias* 3, *Seseli hippomarathrum* 8, *Hieracium pilosella* 7, *Galeopsis angustifolia*, *Leontodon autumnalis*
– moss and lichen layer (2%, 0.5 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 32.50°C, T_{MEAN} 16.75°C, F (moisture) 3.00, N (nutrients) 2.40, R (Ca^{++}) 8.30, M 3, PD 180, S 5

Ant species		nests / 100 m²
Tetramorium impurum		40.0
Myrmica specioides		33.3
Temnothorax interruptus		13.3
Lasius flavus		13.3
Myrmica schencki		6.7
Lasius alienus	6.	6.7
total		

Species richness index S_{100} : 9.52 species / 100 m².
The plot showed a strong scrub encroachment when visited after 23 years (17 May 2002) and was additionally shaded by high bushes at the southern margin of the plot (the former country lane) and by tall poplar trees 40 m away.

SP 22: Kalktrockenrasen Quenstedt

Habitat type: xerothermous limestone grassland
Date of investigation: 7 June 1980
Situation: Quenstedt-1.4 kmE, 51.7066°N, 11.4689°E, 160 m
Plot size: S-area 38 m², Q-area 70 m², habitat size: 500 m²
Orography (slope and orientation of surface): 20° S
Soil conditions: rendzina with 4 cm Ah horizon over limestone.
Comments: Area of ancient limestone mining that caused deep pits and steep abruptions. The plot is probably the original upper part of the slope in transition to the plateau.
Vegetation:
– herb layer (cover 55%):
Salvia pratensis 10, *Potentilla* (*verna* group) 3, *Thymus praecox* 2, *Euphorbia cyparissias*, *Seseli hippomarathrum*, *Cirsium acaule*, *Poterium sanguisorba*, *Asperula cynanchica*, *Koeleria macrantha* (all 0.5)
– moss and lichen layer
– physico-chemical factors, plant and stone density:
T_{MAX} 30.00°C, T_{MEAN} 16.15°C, F (moisture) 3.00, N (nutrients) 2.30, R (Ca^{++}) 8.20, M 2, PD 300, S 4

Ant species	nests / 100 m²
Tetramorium impurum	60.00

Lasius alienus	30.00
Myrmica specioides	18.00
Temnothorax interruptus	15.00
Myrmica schencki	3.40
Formica cunicularia	3.00
Formica rufibarbis	2.00
Myrmica sabuleti 8.	1.80
total	133.20

Species richness index S_{100} 8.84 species / 100 m². There was certainly an under-recording due to hot weather. The plot showed a strong scrub encroachment when visited after 23 years (17 May 2002). Xerothermous grassland only persisted at narrow edges with extreme conditions.

SP 23: Trockenrasen im Ebertal bei Ditfurt

Habitat type: xerothermous limestone grassland
Date of investigation: 12, 13, 19 and 20 May 1979
Situation: Ditfurt-Kirche 2.0 kmE, 51.843°N, 11.223°E, 110 m, vic. Quedlinburg
Plot size: S-area 145 m², Q-area 211 m², habitat size: 5000 m²
Orography (slope and orientation of surface): 10°SW
Soil conditions: Loess renzina over limestone with shallow Ah horizon
Comments: regular sheep grazing.
Vegetation:
– herb layer (cover 90%):
Euphorbia cyparissias, *Potentilla tabernaemontani*, *Hieracium pilosella*, *Thymus* spec., *Eryngium campestre*, *Salvia pratensis*
– moss and lichen layer (cover 10%)
– physico-chemical factors, plant and stone density:
T_{MAX} 28.10°C, T_{MEAN} 15.97°C, F (moisture) 3.10, N (nutrients) 2.30, R (Ca^{++}) 7.60, M 4, PD 450, S 6

Ant species	nests / 100 m²
Lasius flavus	78.30
Lasius alienus	57.90
Tetramorium caespitum	35.60
Myrmica specioides	11.80
Myrmica schencki	6.10
Tetramorium impurum	4.40
Myrmica sabuleti	4.10
Tapinoma subboreale	2.80
Formica rufibarbis	1.90
Myrmecina graminicola	0.70
Formica cunicularia 11.	0.50
total	204.10

Species richness index S_{100} : 9.52 species / 100 m². Ant density was certainly under-recorded due to insufficient experience in 1979.
During random collecting in a follow-up investigation after 23 years (13 May 2002)**,** largely directed on finding *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium* the following nest numbers were found: 10 *flavus*, 10 *alienus*, 6 *sanguinea*, 2 *specioides*, 2.3 *schencki*, 1 *sabuleti*, 4 *caespitum*, 1 *niger*, 0.5 *impurum*. *F.sanguinea* had erradicated all *Serviformiappr.* Sheep grazing had ended in 2000. High growth of herb layer and beginning development of scrubs. *Tapinoma subboreale* vanished.

SP 24: Trockenrasen an Ackerrand bei Ditfurt

Habitat type: xerothermous grassland
Date of investigation: 15 April 1979 and May 1979
Situation: Ditfurt-1.6 km NE, 51.8384°N, 11.2174°E, 120 m
Plot size: S-area 50 m², Q-area 167 m², habitat size: 20000 m²
Orography (slope and orientation of surface): 30°S
Soil conditions: a mixture of downward relocated tschernosem material plus rendzina soil over limestone.
Comments: occasional sheep grazing. Intensively managed arable land begins on the plateau a few meters north of the upper margin of the plot.

Vegetation:
– herb layer (cover 50%):
Festuca rupicola 90, *Centaurea stoebe* 5, *Diplotaxis tenuifolia* 5, *Salvia pratensis* 2, *Rumex acetosella* 2, *Lappula squarrosa*, *Falcaria vulgaris* 1, *Carduus acanthoides* 1, *Erodium cicutarium*, *Euphorbia cyparissias*
– moss and lichen layer (0.02%)
– physico-chemical factors, plant and stone density:
T_{MAX} 30.80°C, T_{MEAN} 16.50°C, F (moisture) 3.00, N (nutrients) 2.20, R (Ca^{++}) 7.00, M 3, PD 300, S 0.3

Ant species	nests / 100 m²
Tetramorium caespitum	78.30
Lasius alienus	21.80
Formica rufibarbis	2.40
Myrmica specioides	2.00
Solenopsis fugax	2.00
Lasius myops	2.00
Myrmica sabuleti	1.00
Formica cunicularia 8.	0.60
total	110.10

Species richness index S_{100} : 7.11 species / 100 m². Ant density was certainly under-recorded due to insufficient experience in 1979.
During random collecting in a follow-up investigation after 23 years (13 May 2002)**,** largely directed on finding *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium*, the following nest numbers were found: x *flavus*, x *fugax*, 0.6 *sabuleti*, 4.3 *alienus*, 5 *rufibarbis*, 1 *cunicularia*, 0.3 *specioides*, 3 *caespitum*.
Sheep grazing had ended in 2000. Higher growth of Herb layer. Initial encroachment of scrubs not visible. Area of off-road biking.

SP 25 Kalkschutthalde Oberau

Habitat type: xerothermous grassland on a heap of limestone rubble
Date of investigation: 8 June and 26 July 1982
Situation: Oberau-1.0 km NW, 51.1933°N, 13.5486°E, 150 m, vic. Meissen
Plot size: S-area 38 m², Q-area 70 m², habitat size: originally 6000 m² in 1934: in 1982 there remained only 250 m² of open habitat on the top of the heap.
Orography (slope and orientation of surface): 30° S
Soil conditions: heap of dumped limestone rubble
Comments: the plot is on the top of the heap dumped in 1934 during the abridgement of the Oberau railway tunnel.
Vegetation:
– shrub layer (cover 30%):
Ligustrum vulgare, *Rosa* spec., *Rhus typhina*
– herb layer (cover 35%):
Euphorbia cyparissias 20, *Potentilla* (*verna* group) 10, *Sedum acre* 10, *Sanguisorba minor* 5, *Hieracium pilosella* 5, *Cirsium acaule* 5, *Anthericium ramosum* 5, *Fragaria vesca* 2, *Carlina vulgaris* 1, *Inula conyza* 2, *Lotus corniculatus*
– moss and lichen layer (20%)
– physico-chemical factors, plant and stone density:
T_{MAX} 28.10°C, T_{MEAN} 16.15°C, F (moisture) 3.00, N (nutrients) 2.40, R (Ca^{++}) 7.70, M 2, PD 400, S 20

Ant species	nests / 100 m²
Tetramorium caespitum	52.60
Formica cinerea	28.90
Tetramorium impurum	21.00
Lasius alienus	18.40
Temnothorax albipennis	9.20
Temnothorax unifasciatus	9.20
Solenopsis fugax	7.90
Ponera coarctata	5.30
Lasius flavus	5.30
Myrmica sabuleti	2.60
Myrmica specioides	2.60

Lasius niger	2.60
Myrmica schencki	2.60
Formica fusca	2.60
Formica cunicularia 15.	1.30
total	172.10

Species richness index S_{100} 16.54 species / 100 m².
A visit on 30 May 2002 revealed a complete scrub encroachment of the heap; trees of 8-12 m height had grown up – among these thick-trunked cherry trees. There remained only a 5-m² patch of bare limestone rubble in the shade of bushes. Here were recorded: *Lasius emarginatus*, *Formica fusca*, *Lasius flavus*, *Lasius alienus*, *Myrmica rubra*, *Myrmica sabuleti*, *Temnothorax affinis*, *Lasius fuliginosus*, *Temnothorax crassispinis*, *Ponera coarctata*.

SP 26: Kalktrockenrasen Bahnböschung Oberau

Habitat type: xerothermous grassland on limestone
Date of investigation: 8 June 1982
Situation: Oberau-1.3 km NW, about 50 m ESE of the bridge, 51.1938°N, 13.5440°E, 150 m
Plot size: S-area 35 m², Q-area 100 m², habitat size: 4000 m²
Orography (slope and orientation of surface): 30° SSW
Soil conditions: protorendzina on limestone (Kalk-Salm-Rendzina) with very loose, weakly humous topsoil consisting fine calcareous material.
Comments: the plot is on the high slope of a railway line deeply excavated through a ridge in 1934.
Vegetation:
– herb layer (cover 35%):
Bromus erectus 30, *Arrhenatherum elatius* 10, *Convolvulus arvensis* 4, *Echium vulgare* 2, *Salvia pratensis* 1, *Euphorbia cyparissias* 1, *Potentilla argentea* 1, *Isatis tinctoria*, *Valerianella locusta*, *Verbascum densiflorum*, *Hypericum perforatum*
– moss and lichen layer (0%)
– physico-chemical factors, plant and stone density:
T_{MAX} 30.40°C, T_{MEAN} 16.67°C, F (moisture) 3.34, N (nutrients) 3.75, R (Ca^{++}) 6.88, M 2, PD 600, S 0

Ant species	nests / 100 m²
Lasius flavus	28.60
Tetramorium caespitum	19.10
Lasius alienus	10.00
Tetramorium impurum	6.40
Ponera coarctata	6.40
Formica rufibarbis	5.00
Myrmica sabuleti	4.50
Solenopsis fugax	4.30
Formica cunicularia	4.00
Myrmica specioides	3.40
Temnothorax albipennis	1.40
Myrmecina graminicola	1.40
Lasius niger	1.40
Myrmica schencki	1.10
Formica sanguinea *15.*	1.00
total	98.00

Species richness index S_{100} 15.68 species / 100 m².
A visit on 30 May 2002 revealed no significant change since 1982. Recorded were: *Tetramorium caespitum* 6.6, *Lasius alienus* 7, *Ponera coarctata* 4, *Tetramorium impurum* 3.3, *Solenopsis fugax* 3, *Formica rufibarbis* 3, *Formica cunicularia* 1, *Temnothorax albipennis* 1, *Formica sanguinea* 1, *Myrmica sabuleti* 1, *Lasius flavus*, *Myrmica schenki*.

SP 27: Saurer Sandtrockenrasen bei Weddersleben

Habitat type: xerothermous grassland on acid sand
Date of investigation: 14 July 1979
Situation: Weddersleben-1.3 km W,51.7616°N, 11.0730°E, 170 m
Plot size: S-area 141 m², Q-area 1000 m², habitat size: 2500 m²
Orography (slope and orientation of surface): 17° S

Soil conditions: syrosem of fine sand (in patches) to ranker earth with 6 cm Ah horizon over sandstone.
Comments: parts of the *Calluna* stand had dried up.
Vegetation:
– herb layer (cover 40%):
Calluna vulgaris (dominant), *Agrostis tenuis* (dominant), *Corynephorus canescens* (subdom.), *Dianthus carthusianorum*, *Campanula rotundifolia*, *Achillea millefolium*, *Hieracium pilosella*, *Euphorbia cyparissias* (all in few specimens)
– moss and lichen layer (0%, 0 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 29.10°C, T_{MEAN} 15.70°C, F (moisture) 3.20, N (nutrients) 2.50, R (Ca^{++}) 3.50, M 2, PD 400, S 1.0

Ant species	nests / 100 m²
Lasius psammophilus	18.40
Lasius alienus	7.30
Solenopsis fugax	2.80
Tetramorium impurum	1.80
Myrmica specioides	0.90
Formica rufibarbis	0.71
Formica cunicularia	0.29
Myrmica sabuleti 8.	0.10
total	32.30

Species richness index S_{100} : 5.58 species / 100 m².
During random collecting in a follow-up investigation after 23 years (14 May 2002)**,** largely directed on finding *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium*, the following nest numbers were found: 25.3 *psammophilus*, 10 *alienus*, 4 *rufibarbis*, 1 *specioides*, 1 *impurum*, 0.3 *sabuleti*. Compared to 1979, the cover of *Calluna* had increased to 67%. The remaining surface was completely covered by moss, *Hieracium pilosella* and lichens. Bare sand was restricted to ejections of a badger's burrow.

SP 28: Neutraler Sandtrockenrasen bei Weddersleben

Habitat type: xerothermous grassland on neutral sand
Date of investigation: 26 May 1979
Situation: Weddersleben-0.8 km SW, 51.7575°N, 11.0828°E, 160 m, vic. Quedlinburg
Plot size: S-area 67 m², Q-area 98 m², habitat size: 9000 m²
Orography (slope and orientation of surface): 17° SW
Soil conditions: ranker earth with 20 cm Ah horizon. The B horizon is a mixture of a syrosem and sandstone rubble.
Comments: situated in front of the sandstone formation Teufelsmauer. Sheep grazing of low intensity.
Vegetation:
– herb layer (cover 95%):
Euphorbia cyparissias, *Armeria maritima*, *Artemisia campestris*, *Dianthus carthusianorum*, *Hieracium pilosella*, *Lotus corniculatus*, *Eryngium campestre*, *Thymus serpyllum*, *Plantago media*, *Galium verum*, *Ononis repens*, *Echium vulgare*
– moss and lichen layer (3%)
– physico-chemical factors, plant and stone density:
T_{MAX} 28.60°C, T_{MEAN} 15.67°C, F (moisture) 3.40, N (nutrients) 2.50, R (Ca^{++}) 5.80, M 3, PD 500, S 6.0

Ant species	nests / 100 m²
Lasius alienus	68.70
Solenopsis fugax	16.10
Lasius flavus	7.30
Myrmica schencki	5.90
Tetramorium impurum	4.40
Myrmica specioides	2.90
Formica rufibarbis	2.00
Ponera testacea	1.50
Lasius jensi	1.50
Formica cunicularia 10.	0.50
total	110.80

Species richness index S_{100} 10.09 species / 100 m².
During random collecting in a follow-up investigation after 23 years (14 May 2002)**,** largely directed on finding *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium*, the following nest numbers were found: 18.3 *alienus*, 3 *cunicularia*, 2 *rufibarbis*, 1.7 *schencki*, 0.7 *specioides*, *flavus*, 0.3 *sabuleti*, *fugax*, *flavus*. Compared to 1979, the height of herb layer and moss cover had increased. The number of stones freely exposed on soil surface was reduced. Signs for sheep pasture were no longer visible but encroachment of scrubs was still very weak.

SP 29: Basischer Sandtrockenrasen Seweckenberge

Habitat type: xerothermous grassland on slightly basic sand
Date of investigation: 12 April, 9 August and 10 August 1980
Situation: Gersdorfer Burg-1.8 km WNW, 51.7739°N, 11.1832°N, 175 m
Plot size: S-area 200 m², Q-area 200 m², habitat size: 3000 m²
Orography (slope and orientation of surface): 17.5° S
Soil conditions: loamy sand, geological outcrop inhomogenous, in patches limestone.
Comments: plot is situated NE of SP 30. Sheep grazing in regular intervals.
Vegetation:
– herb layer (cover 94%):
Festuca cinerea 28, *Dianthus carthusianorum* 17, *Hieracium pilosella* 15, *Armeria maritima* 14, *Euphorbia cyparissias*, *Koeleria macrantha* 9, *Thymus pulegioides* 9, *Galium verum* 8, *Achillea millefolium* 5, *Artemisia campestris* 4, *Erophila verna* 4, *Campanula* spec. 3, *Scabiosa ochroleuca* 3
– moss and lichen layer (3%)
– physico-chemical factors, plant and stone density:
T_{MAX} 27.10°C, T_{MEAN} 15.21°C, F (moisture) 3.20, N (nutrients) 2.10, R (Ca^{++}) 7.00, M 5, PD 1050, S 0.9

Ant species	nests / 100 m²
Lasius alienus	55.00
Lasius flavus	10.00
Lasius psammophilus	4.00
Myrmica specioides	3.00
Formica rufibarbis	2.50
Solenopsis fugax	2.50
Lasius niger	1.50
Tetramorium impurum	1.20
Myrmica schencki	1.00
Myrmica sabuleti	1.00
Lasius myops	1.00
Formica cunicularia	0.50
Lasius jensi 13.	0.50
total	83.70

Species richness index S_{100} : 11.44 species / 100 m².
During random collecting in a follow-up investigation after 23 years (14 May 2002)**,** largely directed on finding *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium*, the following nest numbers were found: 18 *alienus*, 8 *rufibarbis*, 4 *specioides*, 1.3 *psammophilus*, 0.7 *sabuleti*, 1 *jensi* x *umbratus*, *flavus*, *fugax*, 1 *impurum*, 1 *myops*. Compared to 1979, there was a strong increase in height of herb layer (PD raised from 1050 to 2500) and of moss cover. Sheep grazing was stopped at least 4 years ago. Encroachment of scrubs begins.

SP 30: Lehmiger Sandtrockenrasen Seweckenberge

Habitat type: xerothermous grassland on loamy sand
Date of investigation: 13 April, 1 May 1980
Situation: Gersdorfer Burg-1.8 km WNW, 51.7734°N, 11.1818°E, 170 m
Plot size: S-area 89 m², Q-area 89 m², habitat size: 2000 m²
Orography (slope and orientation of surface): 18° S
Soil conditions: sandy-loamy ranker with much skelet over inhomogenous, partially calcareous ground.
Comments: several times per year grazed by sheep. The plot is situated SW of SP 29.
Vegetation:
– herb layer (cover 70%):

Festuca (*ovina*-group), *Achillea millefolium*, *Hieracium pilosella*, *Eryngium campestre*, *Veronica praecox*, *Erophila verna*
– moss and lichen layer (20%, 0.5 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 28.80°C, T_{MEAN} 15.59°C, F (moisture) 2.90, N (nutrients) 2.00, R (Ca^{++}) 8.00, M 5, PD 500, S 9.0

Ant species	nests / 100 m²
Lasius flavus	67.30
Lasius alienus	62.80
Tetramorium impurum	23.60
Solenopsis fugax	12.30
Myrmica specioides	6.70
Myrmica sabuleti	3.40
Myrmica schencki	2.20
Formica rufibarbis	2.20
Formica cunicularia 9.	0.60
total	181.10

Species richness index S_{100} : 8.19 species / 100 m².
During random collecting in a follow-up investigation after 23 years (15 May 2002)**,** largely directed on finding *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium*, the following nest numbers were found: 16.3 *alienus*, 4 *rufibarbis*, 2 *cunicularia*, 1.3 *sabuleti*, 0.7 *schencki*, 0.3 *scabrinodis*, 0.3 *specioides*, *fugax*, *flavus*. Compared to 1979, there was a strong increase in height of herb layer (PD raised from 500 to 2500) and a strong encroachment of scrubs. Sheep grazing was stopped at least 4 years ago. Stones freely exposed on soil surface had nearly vanished.

SP 31: Magerrasen Seweckenberge

Habitat type: oligotrophic grassland
Date of investigation: 14 June, 9 August 1980
Situation: Gersdorfer Burg-1.8 km WNW, 51.7723°N, 11.1822°E, 165 m
Plot size: S-area 98 m², Q-area 200 m², habitat size: 4000 m²
Orography (slope and orientation of surface): 3° S
Soil conditions: loess soil with strong Ah horizon, tending to a tschernosem.
Comments: plot is situated below SP 30. Sheep grazing seems to be less intensive than on SP 30.
Vegetation:
– shrub layer (cover 3%):
Crataegus spec.
– herb layer (cover 100%):
Dactylis glomerata, *Koeleria pyramidata*, *Galium mollugo*, *Galium verum*, *Agrimonia eupatorium*, *Nonea pulla*, *Ononis repens*, *Filipendula vulgaris*, *Lathyrus pratensis*, *Alyssum alyssoides*, *Hieracium pilosella* (few plants), *Vicia tetrasperma*, *Trifolium campestre*, *Poa trivialis*, *Poa pratensis*, *Arrhenatherum elatius*, *Festuca* (*ovina*) group
– moss and lichen layer (5%, 3 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 18.50°C, T_{MEAN} 13.50°C, F (moisture) 4.40, N (nutrients) 3.70, R (Ca^{++}) 7.00, M 5, PD 2200, S 1.5

Ant species	nests / 100 m²
Lasius alienus	84.50
Lasius flavus	49.90
Lasius niger	22.40
Solenopsis fugax	4.10
Myrmica schencki	3.00
Formica rufibarbis	2.00
Myrmica scabrinodis	1.50
Tetramorium impurum	1.00
Lasius jensi	1.00
Formica cunicularia 10.	0.50
total	169.90

Species richness index S_{100} 8.93 species / 100 m².
A visit on 15 May 2002 showed a strong enroachment of scubs. Sheep grazing had stopped at least 4 years ago (probably longer).

SP 32: Halbtrockenrasen Schafberg Baruth

Habitat type: mesoxerophytic grassland on basalt
Date of investigation: 12 May 1981
Situation: Baruth 0.9 km NE, 193 m, 51.2354°N, 14.6012°E, vic. Bautzen
Plot size: S-area 74.5 m², Q-area 74.5 m², habitat size: 500 m²
Orography (slope and orientation of surface): 8° E
Soil conditions: Ranker earth over basalt. Basalt freely exposed on a small patch only.
Vegetation:
– herb layer (cover 100%):
Poa pratensis, *Arrhenatherum elatius*, *Echium vulgare*, *Sedum acre*, *Saxifraga granulata*, *Myosotis stricta*, *Pimpinella saxifraga*, *Potentilla argentea*, *Cerastium arvense*, *Taraxacum* spec., *Erophila verna*, *Viola tricolor*, *Hieracium pilosella*, *Plantago lanceolata*
– moss and lichen layer (5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 19.60°C, T_{MEAN} 14.14°C, F (moisture) 3.46, N (nutrients) 3.23, R (Ca^{++}) 4.38, M 3, PD 1300, S 0

Ant species	nests / 100 m²
Lasius flavus	72.50
Myrmica sabuleti	4.00
Tetramorium caespitum	4.00
Formica cunicularia	3.40
Lasius niger	2.70
Ponera coarctata	1.35
Formica fusca 7.	0.50
total	88.45

Species richness index S_{100} : 6.38 species / 100 m²

SP 33: Magerrasen Kunnersdorf

Habitat type: oligotrophic grassland
Date of investigation: 26 May 1982
Situation: Kunnersdorf-Kirche 1.05 km SSE, 51.1967°N, 14.9323°E, 210 m
Plot size: S-area 23 m², Q-area 35.5 m², habitat size: 60 m²
Orography (slope and orientation of surface): 23° S
Soil conditions: ranker earth over shist.
Comments: the plot is a small residual area within a grassland hypertrophied by intensive cattle pasture.
Vegetation:
– herb layer (cover 100%):
Grasses (e.g., *Poa pratensis*) 200, *Galium mollugo* 10, *Rumex acetosa* 10, *Luzula campestris* 10, *Saxifraga granulata* 7, *Pimpinella saxifraga* 6, *Achillea millefolium* 6, *Veronica chamaedrys* 6, *Ranunculus acris* 4, *Plantago lanceolata* 3, *Hieracium pilosella* 2, *Campanula patula*, *Sedum maximum*, *Agrimonia eupatorium*, *Rumex acetosella* (all 0.1)
– moss and lichen layer (3%)
– physico-chemical factors, plant and stone density:
T_{MAX} 18.50°C, T_{MEAN} 13.80°C, F (moisture) 4.20, N (nutrients) 3.50, R (Ca^{++}) 4.70, M 3, PD 2000, S 0.06

Ant species	nests / 100 m²
Myrmica sabuleti	39.20
Lasius flavus	34.80
Formica cunicularia	2.80
Formica fusca 4.	2.80
total	79.60

Species richness index S_{100} 4.61 species / 100 m².
In the year 1995, fully hypertrophied and extremely changed in plant species composition by intensive cattle pasturing.

SP 34: Halbtrockenrasen Hofe-Berg bei Leuba

Habitat type: mesoxerophytic grassland on basalt
Date of investigation: 18 May 1981
Situation: Leuba-Kirche 0.53 km NNW, 51.0463°N, 14.9423°E, 270 m
Plot size: S-area 66.5 m², Q-area 66.5 m², habitat size: 600 m²
Orography (slope and orientation of surface): 12° S
Soil conditions: Ranker earth over basalt.
Comments: occasional sheep pasture
Vegetation:
– herb layer (cover 95%):
Festuca ovina aggr., *Hieracium pilosella*, *Plantago lanceolata*, *Plantago major*, *Luzula campestris*, *Polygala vulgaris*, *Saxifraga granulata*, *Ranunculus acris*, *Lychnis viscaria*, *Trifolium montanum*, *Trifolium repens*, *Trifolium dubium*, *Cerastium arvense*, *Campanula patula*, *Campanula rotundifolia*, *Lotus corniculatus*, *Pimpinella saxifraga*, *Rhinanthus minor*, *Achillea millefolium*, *Calluna vulgaris*, *Rumex acetosa*, *Galium mollugo*
– moss and lichen layer (5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 20.00°C, T_{MEAN} 13.88°C, F (moisture) 4.10, N (nutrients) 3.20, R (Ca^{++}) 5.00, M 3, PD 1100, S 0.4

Ant species		nests / 100 m²
Lasius flavus		33.10
Myrmica sabuleti		7.50
Formica cunicularia	3.	4.50
total		45.10

Species richness index S_{100} 3.27 species / 100 m². In 2002 there was a mixture of mowing and occasional sheep paddocking with a significant change in plant composition.

SP 35: Calluna-Heide, NSG Quitzdorf

Habitat type: open *Calluna* heath
Date of investigation: 8 June 1981, 29 June 1986
Situation: Vic. Niesky: Jänkendorf-2 km N, 51.2739°N, 14.7973°E, 160 m
Plot size: S-area 108 m², Q-area 280 m², habitat size: 2000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: Sand with fine chisel, podsol.
Comments: the plot is a 90 m long and 30 m wide fringe between a pine forest and the water of the Quitzdorf dam established in 1974. It was a true *Calluna* heath during the investigation period 1981-1986 and was inundated in Juli 1981 for about 4 days.
Vegetation:
– shrub layer (cover 8%, mean height 2 m):
Pinus silvestris, *Betula pendula*
– herb layer (cover 60%):
Calluna vulgaris (eudominant 59.5%), *Vaccinium myrtillus* 0.01, *Linaria vulgaris* 0.01, *Epilobium angustifolium* 0.01, *Melampyrum pratense* 0.01, *Corynephorus canescens* 0.01
– moss and lichen layer (30%)
– litter layer(cover 20%, 0.5 cm): *Calluna* litter
– physico-chemical factors, plant and stone density:
T_{MAX} 23.80°C, T_{MEAN} 15.38°C, F (moisture) 3.60, N (nutrients) 3.30, R (Ca^{++}) 3.20, M 2, PD 1000, S 0

Ant species	nests / 100 m²
Tetramorium caespitum	25.00
Lasius psammophilus	20.40
Formica sanguinea	4.60
Myrmica schencki	1.90
Strongylognathus testaceus	0.90
Lasius niger	0.90
Lasius umbratus	0.90
Tetramorium impurum	0.90
Camponotus ligniperda	0.70
Temnothorax interruptus	0.70
Formica pratensis	0.36
Myrmica rugulosa	0.30

Myrmica lobicornis		0.30
Myrmica ruginodis	14.	0.30
total		58.16

Species richness index S_{100} 7.88 species / 100 m².
The plot was inundated at least three times between 1981 and 2002 during strong floods. It developed into a periodically wet *Calluna-Juncus*-grass stand by the end of the 1980s. During an inspection on 18 April 2002 were found: *Lasius platythorax* 2, *Lasius niger* 3 and *F. sanguinea* 3.

SP 36: Sanddüne bei Daubitz
Habitat type: aeolic sand dune
Date of investigation: 27 May and 3 June 1981
Situation: Daubitz-Kirche-4.1 km ENE, 51.4139°N, 14.8840°E, 140 m
Plot size: S-area 315 m², Q-area 1250 m², habitat size: 2000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: fine aeolic dune sand without any humus horizon.
Comments: a covering of the dune by a *Pinus* forest was removed in 1938 by the initial works for highway (Autobahn) construction which were not continued because of the outbreak of 2nd World War.
Vegetation:
– herb layer (cover 10%):
Corynephorus canescens 100*, Carex arenaria* 2, few sapling of *Pinus sylvestris*, few *Calluna vulgaris*, *Hieracium pilosella*
– moss and lichen layer (cover 30%)
Polytrichum piliferum
– physico-chemical factors, plant and stone density:
T_{MAX} 32.00°C, T_{MEAN} 17.30°C, F (moisture) 2.50, N (nutrients) 1.75, R (Ca^{++}) 2.00, M 2, PD 100, S 0

Ant species		nests / 100 m²
Lasius psammophilus		20.00
Tetramorium caespitum		1.30
Lasius niger		1.30
Formica cinerea		0.50
Formica sanguinea		0.30
Formica clara		0.20
Formica fusca		0.20
Formica pratensis	8.	0.08
total		23.88

Species richness index S_{100} : 3.34 species / 100 m².
The plot was found nearly completely covered by *Pinus* scrub during a visit in May 2016.

SP 37: Sanddüne mit Kiefernaufwuchs bei Daubitz
Habitat type: initial *Pinus* forest on dune sand
Date of investigation: 3 June 1981
Situation: Daubitz-Kirche-4.1 km ENE, 51.4139°N, 14.8837°E, 140 m
Plot size: S-area 87 m², Q-area 87 m², habitat size: 1000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: fine aeolic dune sand, in patches with a very thin layer of needle litter, without humus horizon.
Comments: immediately adjacent to SP 36. Pines about 5 m high and with 15 cm diameter breast height and about 40 years old. Succession age 43 years.
Vegetation:
– tree layer (cover 30%):
Pinus sylvestris
– herb layer (cover 8%):
Corynephorus canescens, *Hieracium pilosella*, *Carex arenaria*
– moss and lichen layer (cover 40%)
– litter layer (cover 5%, 2 mm)
– physico-chemical factors, plant and stone density:
T_{MAX} 24.40°C, T_{MEAN} 15.51°C, F (moisture) 3.00, N (nutrients) 2.00, R (Ca^{++}) 2.00, M 2, PD 80, S 0

Ant species		nests / 100 m²
Lasius psammophilus		20.70
Myrmica rugulosa		5.70
Lasius niger		3.40
Tetramorium caespitum		2.30
Myrmica sabuleti		1.10
Myrmica ruginodis	6.	0.40
total		33.60

Species richness index S_{100} 5.14 species / 100 m².
In 2015 a fully grown pine forest.

SP 38: Sandtrockenrasen auf Badestrand bei Litschen

Habitat type: xerothermous grassland on relocated sand
Date of investigation: 20 July and 13 August 1982
Situation: Lohsa-Kirche 1.3 km SSW, 51.3722°N, 14.3972°E, 126 m
Plot size: S-area 164 m², Q-area 344 m², habitat size: 3000 m²
Orography (slope and orientation of surface): 4.5° N
Soil conditions: heaped fine sand, in patches with 3 cm of a strongly condensed Ah horizon, 30% of surface bare sand.
Comments: intensively visited beach at the margin of a residual lake of a strip mine the floofing of which began in 1971. Used as a bathing beach not longer than 8 years.
Vegetation:
– tree layer (cover 5%):
Betula pendula, *Pinus sylvestris*
– herb layer (cover 45%):
Festuca (*ovina*-group) 350, *Corynephorus canescens* 50, *Hieracium pilosella* 30, *Avenella flexuosa* 30, *Tanacetum vulgare* 5, *Heliochrysum arenarium* 5, *Hypochoeris radicata* 4, *Oenothera biennis* 1, *Rumex acetosella* 1, *Jasione montana* 1, *Rubus* spec. 1
– moss and lichen layer (25%)
– physico-chemical factors, plant and stone density:
T_{MAX} 28.10°C, T_{MEAN} 16.36°C, F (moisture) 3.60, N (nutrients) 2.40, R (Ca^{++}) 3.20, M 6, PD 300, S 0

Ant species		nests / 100 m²
Manica rubida		11.00
Lasius psammophilus		11.00
Tetramorium caespitum		8.50
Lasius niger		6.10
Myrmica constricta		1.80
Temnothorax interruptus		1.00
Formica cinerea		0.90
Leptothorax acervorum		0.60
Myrmica schencki		0.30
Myrmica rugulosa	10.	0.30
total		41.50

Species richness index S_{100} 7.71 species / 100 m².

SP 39: Gartenrasen Zwickau-Weissenborn

Habitat type: trimmed turf (clip lawn) on hortisol
Date of investigation: 30 July 1979 and 31 August 1979
Situation: Zwickau-Weissenborn, Grillparzerstr. 20, 50.74084°N, 12.46533°E, 290 m
Plot size: S-area 32 m², Q-area 32 m², habitat size: 60 m²
Orography (slope and orientation of surface): 0°
Soil conditions: hortisol with 20 cm Ah horizon over loam
Comments: The plot was arable land until 1937 and founded as a garden in this year. Garden turf mowed in 2-weeks intervals, never higher than 6 cm, dense-felty and frequently crossed by humans.
Vegetation:
– herb layer (cover 100%):
indet. grasses, *Plantago major* 4, *Bellis perennis* 4, *Prunella vulgaris*, *Stellaria media*, *Taraxacum officinale* 1

– moss and lichen layer (20%)
– physico-chemical factors, plant and stone density:
T_{MAX} 21.90°C, T_{MEAN} 14.37°C, F (moisture) 4.80, N (nutrients) 6.50, R (Ca^{++}) 6.50, M 5, PD 600, S 0

Ant species	nests / 100 m²
Lasius niger	70.30
Myrmica rugulosa	35.40
Lasius flavus	32.80
Myrmica rubra 4.	24.40
total	162.90

Species richness index S_{100} 5.14 species / 100 m².

SP 40: Gartenrasen Gatersleben
Habitat type: trimmed turf (clip lawn) on tschernosem
Date of investigation: 20 July 1979
Situation: Gatersleben, Selkeweg 5, 51.8302°N, 11.2746°E, 110 m
Plot size: S-area 31.5 m², Q-area 31.5 m², habitat size: 200 m²
Orography (slope and orientation of surface): 0°
Soil conditions: loess-tschernosem
Comments: mowed in 3-weeks intervals, maximum height 12 cm, rarely crossed by humans.
Vegetation:
– herb layer (cover 95%):
indet. grasses 170, *Prunella vulgaris* 19, *Plantago lanceolata* 11, *Taraxacum officinale* 11, *Plantago major* 3, *Leontodon hispidus* 3, *Cirsium arvense*, *Bellis perennis*, *Lotus corniculatus*, *Trifolium pratense* (all 1)
– moss and lichen layer (cover 10%)
– physico-chemical factors, plant and stone density:
T_{MAX} 20.40°C, T_{MEAN} 14.32°C, F (moisture) 4.50, N (nutrients) 5.20, R (Ca^{++}) 5.50, M 4, PD 1000, S 0

Ant species	nests / 100 m²
Lasius niger	108.00
Lasius flavus	54.00
Myrmica rugulosa	3.20
Myrmica rubra 4.	3.20
total	168.40

Species richness index S_{100} 5.14 species / 100 m².

SP 41: Hochstaudenflur Selkeaue Gatersleben
Habitat type: tall herb community on alluvial loam
Date of investigation: 22 July 1979
Situation: Gatersleben-Kirche 1.6 km W, 51.8323°N, 11.2752°E, 110 m, vic. Aschersleben
Plot size: S-area 36.5 m², Q-area 36.5 m², habitat size: 1000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: lofty, strongly humous Ah horizon over slightly calcareous alluvial loam.
Comments: the plot is situated in a flood plane with a 10% yearly inundation probability. It is variably moist, not regularly used and provides optimum growing conditions. *Cirsium arvense* reaches 1.6 m height, *Cirsium palustre* 2.0 m and *Conium maculatum* up to 2.1 m. The PD value is a seasonal mean, it was 6000 at the day of investigation.
Vegetation:
– herb layer (cover 100%):
Lamium purpureum 60, *Galium mollugo* 30, *Cirsium arvense* 30, *Urtica dioica* 10, *Galium aparine* 10, *Cirsium palustre* 4, *Achillea millefolium* 3, *Tanacetum vulgare* 3, *Hypericum perforatum* 2, *Scrophularia nodosa* 1, *Conium maculatum* 1
– moss and lichen layer
– physico-chemical factors, plant and stone density:
T_{MAX} 15.60°C, T_{MEAN} 13.27°C, F (moisture) 5.60, N (nutrients) 6.60, R (Ca^{++}) 5.80, M 1, PD 4000, S 0

Ant species	nests / 100 m²
Myrmica rubra	74.10
total	74.10

Species richness index S_{100} 1.0 species / 100 m².

SP 42: Frischwiese bei Ditfurt

Habitat type: fresh meadow
Date of investigation: June 1979
Situation: Ditfurt-Kirche 1.6 km NE, 51.8387°N, 11.2198°E, 110 m
Plot size: S-area 61 m², Q-area 61 m², habitat size: 5 ha
Orography (slope and orientation of surface): 0°
Soil conditions: Vega with alluvial, slightly calcareous loam.
Comments: Extensive pasture with cattle and sheep.
Vegetation:
– herb layer (cover 100%):
Dactylis glomerata, *Lolium perenne*, *Cynosurus christatus*, *Poa* spec., *Trisetum flavescens* (all together 90), *Galium mollugo* 2, *Plantago lanceolata*, *Urtica dioica*, *Bellis perennis*, *Prunella vulgaris*, *Achillea millefolium*, *Cirsium arvense*, *Carduus acanthoides*, *Cynoglossum officinale*, *Odontites rubra*, *Agrimonia eupatorium*
– moss and lichen layer
– physico-chemical factors, plant and stone density:
T_{MAX} 17.20°C, T_{MEAN} 13.61°C, F (moisture) 5.00, N (nutrients) 6.10, R (Ca^{++}) 6.20, M 4, PD 2500, S 0.05

Ant species		nests / 100 m²
Lasius flavus		73.80
Lasius niger	2.	26.20
total		100.00

Species richness index S_{100} 2.21 species / 100 m².

SP 43: Feldrandstreifen in Ackerland bei Hausneindorf

Habitat type: Oat Grass meadow
Date of investigation: September 1979
Situation: Hausneindorf-2.0 km NE, 51.8585°N, 11.2974°E,160 m, vic. Aschersleben
Plot size: S-area 83 m², Q-area 143 m², habitat size: 500 m²
Orography (slope and orientation of surface): 6° SW
Soil conditions: chalky loess-tschernosem with a lot of big stones.
Comments: the plot is a 4-m wide edge strip between intensively managed arable land and a county lane. At the other side of the lane is also an area of arable land larger than 1 km². The big stones on the plot are field stones removed from arable land. Occasional sheep pasture August-December.
Vegetation:
– herb layer (cover 90%):
Galium mollugo 50, *Arrhenaterum elatius* 50, *Carduus acanthoides* 10, *Achillea millefolium* 10, *Dactylis glomerata* 10, *Daucus carota* 8, *Cirsium arvense* 3, *Plantago lanceolata* 2, *Lamium purpureum* 2, *Cichorium intybus* 1
– moss and lichen layer
– physico-chemical factors, plant and stone density:
T_{MAX} 20.40°C, T_{MEAN} 14.05°C, F (moisture) 4.20, N (nutrients) 6.50, R (Ca^{++}) 7.10, M 3, PD 1800, S 20.0

Ant species		nests / 100 m²
Lasius flavus		92.50
Lasius niger		42.20
Myrmica sabuleti		14.40
Lasius alienus		7.20
Formica rufibarbis		2.80
Myrmica schencki		1.60
Formica cunicularia		1.40
Formica sanguinea		0.70
Lasius jensi		0.70
Tetramorium impurum	10.	0.70
total		164.20

Species richness index S_{100} 9.35 species / 100 m².
During random collecting in a follow-up investigation after 23 years (13 May 2002)**,** largely directed on finding *Lasius* s.str., *Myrmica*, *Formica* and *Tetramorium*, the following nest numbers were found:

many *flavus*, 14 *niger*, 12.3 *sabuleti*, 5 *alienus*, 2 *rufibarbis*, 2 *cunicularia*, 1.3 *schencki*, 1 *jensi*, 1 *sanguinea*, 0.3 *caespitum*. Sheep grazing was abandoned in about 1992 leading to height increase of herb layer and strong scrub encroachment from the margin of lane.

SP 44: Schafweide Heimburg

Habitat type: fresh-dry sheep pasture
Date of investigation: 3 and 4 October 1980
Situation: Heimburg 1.2 km WNW, 51.8261°N, 10.8946°E, 250 m
Plot size: S-area 28 m², Q-area 44 m², habitat size: 1 ha
Orography (slope and orientation of surface): 7° E
Soil conditions: Loess-rendzina over shell limestone, strong superficial compaction by intensive pasture.
Comments: very short-grassy (4 cm) by intensive sheep grazing.
Vegetation:
– herb layer (cover 100%):
Agrimonia eupatorium, *Daucus carota*, *Cirsium arvense*, *Lolium perenne*, *Bellis perennis*, *Leontodon autumnalis*, *Taraxacum officinale*, *Plantago lanceolata*, *Plantago media*, *Cirsium lanceolatum*, *Achillea millefolium*, *Rosa* spec., *Potentilla reptans*, *Trifolium repens*
– moss and lichen layer (8%)
– physico-chemical factors, plant and stone density:
T_{MAX} 24.10°C, T_{MEAN} 14.11°C, F (moisture) 4.80, N (nutrients) 5.50, R (Ca^{++}) 7.70, M 6, PD 400, S 0.01

Ant species	nests / 100 m²
Myrmica rubra	30.60
Lasius niger	7.50
Lasius flavus	2.50
Myrmica sabuleti 4.	1.50
total	42.10

Species richness index S_{100} : 4.05 species / 100 m².

SP 45: Wegrandstreifen Heteborn

Habitat type: fresh-dry sheep pasture on tschernosem
Date of investigation: 1 August 1980
Situation: Heteborn-0.8 km ESE, 51.89134°N, 11.30056°E, 160 m
Plot size: S-area 26 m², Q-area 400 m², habitat size: 4000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: loess-tschernosem with superficial compaction.
Comments: short-grassy edge strip of a country lane with chery trees. Frequent sheep grazing.
Vegetation:
– tree layer (cover 16%, mean height 6 m):
Cerasus avium in distances of 10-15 m
– herb layer (cover 100%):
Grasses, *Trifolium repens* 10, *Achillea millefolium* 10, *Medicago lupulina* 5, *Bellis perennis* 5, *Urtica dioica* 1, *Cirsium arvense* 1, *Cirsium lanceolatum* 1
– moss and lichen layer
– physico-chemical factors, plant and stone density:
T_{MAX} 20.40°C, T_{MEAN} 13.99°C, F (moisture) 4.70, N (nutrients) 6.70, R (Ca^{++}) 7.00, M 5, PD 900, S 0.03

Ant species	nests / 100 m²
Lasius flavus	103.40
Lasius niger	71.60
Myrmica rugulosa	16.10
Myrmica rubra	1.80
Lasius umbratus	0.25
Lasius fuliginosus	0.25
Lasius brunneus 7.	0.25
total	193.65

Species richness index S_{100} 4.79 species / 100 m².

SP 46: Puccinellia-Rasen auf Salzstelle Hecklingen

Habitat type: moist salt meadow
Date of investigation: 3 May 1980
Situation: 1.6 km E Hecklingen near Stassfurt, 51.8491°N, 11.5521°E, 65 m.
Plot size: S-area 33 m², Q-area 100 m²
Orography (slope and orientation of surface): 0
Soil conditions: 3 cm of dense-felted root turf over moist, fine-grained salty material, salt content about 0.04%, pH 7.6 (Hiebsch 1961). Salinity > 14 mS/cm.
Comments: spring-fed salt meadow with a dense *Puccinellia* turf, beyond the *Salicornia* combat zone.
Vegetation:
– herb layer (cover 100%):
Puccinellia distans, *Aster tripolium*, *Agrostis stolonifera*, *Lotus tenuis*, *Juncus gerardii*, *Althaea officinalis* (few bushes)
– physico-chemical factors, plant and stone density:
T_{MAX} 19.80°C, T_{MEAN} 14.39°C, F (moisture) 6.70, N (nutrients) 5.20, R (Ca^{++}) 7.50, M 3, PD 1300, S 0

Ant species	nests / 100 m²
Myrmica scabrinodis	65.50
Lasius niger	13.80
Myrmica gallienii	6.90
Myrmica curvithorax	6.90
Lasius flavus	4.00
Myrmica ruginodis 6.	3.00
total	100.10

Species richness index S_{100} 7.09 species / 100 m².

SP 47: Frischwiese bei Leuba

Habitat type: fresh meadow
Date of investigation: 19 May 1981
Situation: Leuba-Kirche 0.52 km NNW, 51.0461°N, 14.9416°E, 260 m, vic. Görlitz
Plot size: S-area 45.5 m², Q-area 45.5 m², habitat size: 600 m²
Orography (slope and orientation of surface): 12° S
Soil conditions: ranker earth over basalt in transition to brown earth.
Comments: the plot was situated below SP 34 and surrounded by arable land.
Vegetation:
– herb layer (cover 98%):
Poa pratensis, *Galium mollugo*, *Cerastium arvense*, *Achillea millefolium*, *Luzula campestris*, *Ranunculus acris*, *Veronica chamaedrys*, *Plantago lanceolata*, *Rumex acetosa*, *Pimpinella saxifraga*, *Urtica dioica*, *Sanguisorba minor*, *Polygala vulgaris*
– moss and lichen layer (1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 19.80°C, T_{MEAN} 13.90°C, F (moisture) 4.40, N (nutrients) 4.00, R (Ca^{++}) 5.20, M 3, PD 1300, S 8

Ant species	nests / 100 m²
Lasius flavus	98.90
Lasius niger	39.60
Lasius mixtus	8.80
Myrmica scabrinodis	6.60
Formica cunicularia	4.40
Myrmica schencki	2.20
Myrmica rubra 7.	2.20
total	162.70

Species richness index S_{100} 8.25 species / 100 m².

SP 48: Ackerbrache bei Daubitz

Habitat type: 5-years-old fallow of arable land
Date of investigation: 27 May and 2 June 1981
Situation: Daubitz-Kirche 2.5 km ENE, 51.4021°N, 14.8639°E, 148 m
Plot size: S-area 28 m², Q-area 59 m², habitat size: 1 ha

Orography (slope and orientation of surface): 0°
Soil conditions: sand-gley, periodically moist. Groundwater influx from fish ponds in the east, groundwater table during investigation in 60 cm depth.
Comments: the plot was a fallow on former arable used for the last time in 1976. It was in development to an *Alopecurus pratensis* meadow, was mowed once a year and had cattle grazing. Directly adjacent to SP 49.
Vegetation:
– herb layer (cover 90%):
Rumex acetosella 3, *Poa pratensis* 3, *Agrostis stolonifera* 3, *Festuca pratensis* 2, *Holcus lanatus* 2, *Agropyron repens* 3, *Alopecurus pratensis* 1, *Aphanes microcarpa* 1, *Trifolium repens* 1, *Galeopsis tetrahit* +, *Viola arvensis* 1, *Myosotis arvensis* r, *Veronica agrestis* r, *Plantago lanceolata* +, *Stellaria media* +
– physico-chemical factors, plant and stone density:
T_{MAX} 18.90°C, T_{MEAN} 14.17°C, F (moisture) 5.30, N (nutrients) 5.80, R (Ca^{++}) 4.60, M 4, PD 2000, S 0

Ant species	nests / 100 m²
Myrmica rubra	7.10
Myrmica gallienii 2.	1.70
total	8.80

Species richness index S_{100} 2.23 species / 100 m².
The plot was re-transformed to arable land in about 1998.

SP 49: Wiesenfuchschwanz-Wiese bei Daubitz

Habitat type: Date of investigation: 2 June 1981
Situation: Daubitz-Kirche 2.5 km ENE, 51.4021°N, 14.8637°E, 148 m
Plot size: S-area 50 m², Q-area 50 m², habitat size: 20 ha
Orography (slope and orientation of surface): 0°
Soil conditions: sand-gley, periodically moist. Groundwater influx from fish ponds in the east, groundwater table during investigation in 60 cm depth.
Comments: permanent grassland, variably moist, mowed once a year, cattle grazing. Adjacent to SP 48. PD before mowing 6000.
Vegetation:
– herb layer (cover 100%):
Alopecurus pratensis 3, *Dactylis glomerata* 2, *Poa pratensis* 2, *Poa trivialis* 2, *Taraxacum officinale* 2, *Bellis perennis* 1, *Trifolium repens* 2, *Ranunculus acer* 1, *Festuca pratensis* 1, *Cerastium holosteoides*, *Poa anua*, *Festuca rubra*, *Lolium perenne*, *Deschampsia caespitosa*, *Poa subcaerulea*, *Cardamine pratensis*, *Rumex acetosa*, *Gnaphalium uliginosum*, *Holcus lanatus*, *Ranunculus repens*, *Rumex crispus*
– moss and lichen layer (1%)
– litter layer (0%)
– physico-chemical factors, plant and stone density:
T_{MAX} 15.70°C, T_{MEAN} 13.42°C, F (moisture) 6.00, N (nutrients) 5.80, R (Ca^{++}) 5.00, M 5, PD 4000, S 0

Ant species	nests / 100 m²
total	0

Species richness index S_{100} 0.0 species / 100 m².
No nests found, no foragers observed, no catches in pitfall traps.

SP 50: Laubgehölz Steinkuhlen

Habitat type: grove of mixed deciduous trees
Date of investigation: end of July 1979
Situation: Friedrichsaue-1.5 kmW, 51.8470°N, 11.3235°E,160 m
Plot size: S-area 60 m², Q-area 71 m², habitat size: 2000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: initial rendzina over limestone, Ah horizon 5-20 cm thick with 50% of total volume consisting of limestone rubble.
Comments: bottom of a former limestone quarry closed down at least 100 years ago. Strongly shaded from the south by a 5-8 m high limestone cliff. Directly south of SP 3.
Vegetation:
– tree layer (cover 80%, height 8-15 m):

Robinia pseudacacia, *Ulmus minor*, *Cerasus avium*
– shrub layer (cover 15%, Height 2-5 m):
Crataegus curvisepala
– herb layer (cover 50%):
Geum urbanum 25, *Geranium robertianum* 10, *Viola hirta* 20, *Ulmus minor* 5, *Sambucus nigra* 5, *Urtica dioica* 0.5
– moss and lichen layer (5%)
– litter layer (45%, 1 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 14.40°C, T_{MEAN} 12.75°C, F (moisture) 4.80, N (nutrients) 6.10, R (Ca^{++}) 7.30, M 1, PD 500, S 8

Ant species		nests / 100 m²
Stenamma debile		25.00
Myrmica ruginodis		11.70
Lasius fuliginosus	3.	1.40
total		38.10

Species richness index S_{100} 3.27 species / 100 m².

SP 51: Holundergehölz bei Gatersleben

Habitat type: Sambucus grove
Date of investigation: 8 September 1979
Situation: Gatersleben-1.5 SW, 51.8148°N, 11.2702°E, 130 m, vic. Aschersleben
Plot size: S-area 31.1 m², Q-area 31.1 m², habitat size: 3400 m²
Orography (slope and orientation of surface): 0°
Soil conditions: loess-tschernosem, clayey, with small amounts of limestone skelet.
Comments: the grove was situated completely isolated in the centre of a 90-ha area of intensively used arable land.
Vegetation:
– shrub layer (cover 70%, mean height 5 m):
mainly *Sambucus nigra*, few *Syringa vulgaris*
– herb layer (cover 60%):
Urtica dioica 50, *Viola reichenbachiana* 50, *Chenopodium hybridum* 2
– moss and lichen layer (cover 20%, 1 cm)
– litter layer (10%, 1 cm)
– dead wood on ground (5%, 1 cm):
a lot of dead branches and twigs
– physico-chemical factors, plant and stone density:
T_{MAX} 15.40°C, T_{MEAN} 13.13°C, F (moisture) 5.25, N (nutrients) 8.00, R (Ca^{++}) 7.00, M 2, PD 600, S 0

Ant species		nests / 100 m²
Myrmica rubra		22.50
Myrmica ruginodis	2.	4.10
total		26.60

Species richness index S_{100} 2.59 species / 100 m².

SP 52: Windschutzstreifen bei Gatersleben

Habitat type: deciduous windbreak grove
Date of investigation: 21 and 22 June 1980
Situation: Gatersleben-Kirche 2.0 km NW, 51.83518°N, 11.26313°E. 110 m, vic. Aschersleben
Plot size: S-area 109 m², Q-area 437 m², habitat size: 3000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: loess-tschernosem
Comments: windbreak of 1 km length and 8 m depth within arable land. In the centre very dark, without vegetation on ground but with a cover of leaf litter; at the sunny border to arable land with a very tall, felty herb layer of up to 80 cm height.
Vegetation:
– tree layer (cover 100% in the centre, mean height 8 m):
Acer campestre (planted about 25 years ago)
– herb layer (0% in centre, 100% at margin):

Chaerophyllum temulum (eudominant), *Galium aparine* (subdom.), *Lamium album* (few), *Stellaria media* (few)
– moss and lichen layer (cover 5%, 1 cm)
– litter layer (10%, 1 cm)
– dead wood on ground (2%, 1 cm):**– physico-chemical factors, plant and stone density:**
T_{MAX} 15.00°C, T_{MEAN} 13.08°C, F (moisture) 4.90, N (nutrients) 7.90, R (Ca^{++}) 6.50, M 2, PD 2000, S 0

Ant species	nests / 100 m²
Lasius niger	2.06
Myrmica rubra	1.83
Lasius brunneus	1.37
Lasius fuliginosus	0.92
Myrmica ruginodis	0.46
Lasius flavus	0.23
Lasius umbratus 7.	0.23
total	7.10

Species richness index S_{100} 3.94 species / 100 m². The habitat became too shady for species of open arable land and oligothermic woodland species are just beginning colonization which can explain the surprisingly low ant density.

SP 53: Forstrekultivierung auf Halde bei Zwickau

Habitat type: Date of investigation: 1 September 1979
Situation: Zwickau-Auerbach-1 km SE, 50.703°N, 12.515°E, 360 m
Plot size: S-area 40 m², Q-area 40 m², habitat size: 1000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: heap of clay schist and phylite. The top layer of native soil deposited for amelioration was completely eroded in patches.
Comments: plateau of a 60 m high heap of coal mining, ameliorated with humous soil and planted with deciduous trees in about 1964. Patchily structured by a change between shady and sunny spots.
Vegetation:
– tree layer (cover 35%):
Alnus glutinosa, *Betula pendula*, *Quercus rubra*, *Acer pseudoplatanus*
– shrub layer (cover 20%):
Betula pendula, *Alnus glutinosa*
– herb layer (cover 40%):
Rumex acetosella, *Agrostis tenuis*, *Betula pendula*, *Alnus glutinosa*
– moss and lichen layer (50%, mainly at sunny spots with eroded soil)
Ceratodon purpureus, *Polytrichum piliferum*, *Bryum* spec.
– litter layer (10%, 1 cm)
– dead wood on ground (0%)
– physico-chemical factors, plant and stone density:
T_{MAX} 19.90°C, T_{MEAN} 13.58°C, F (moisture) 4.50, N (nutrients) 4.00, R (Ca^{++}) 3.70, M 2, PD 500, S 5
(T_{MAX} 27.0°C at sunny patches with moss and 17.0°C at most shady spots)

Ant species	nests / 100 m²
Lasius niger	50.00
Formica fusca	27.50
Tetramorium impurum	25.00
Myrmica lonae	22.50
Myrmica rubra	15.00
Myrmica rugulosa	7.50
Formica rufibarbis	5.00
Myrmica ruginodis 8.	2.50
total	155.00

Species richness index S_{100} 9.74 species / 100 m².

SP 54: Birken-Eichen-Naturverjüngung Dänkritz

Habitat type: initial stage of a natural woodland succession
Date of investigation: 28 April, 2 May, 2 June, 3 June and 30 June 1979

Situation: Dänkritz-0.9 km SE, 50.7700°N, 12.4310°E, 310 m, vic. Zwickau
Plot size: S-area 60 m², Q-area 60 m², habitat size: 1600 m²
Orography (slope and orientation of surface): 0°
Soil conditions: silty to sandy fine gravel (Eocenic alluvial deposits) with a clay layer 60 cm below surface, Ah horizon 30 cm thick.
Comments: the plot was formerly a *Pinus sylvestris* wood cut in about 1960 without reforestation. There are numerous pine stumps and many pieces of pine bark on soil surface.
Vegetation:
– shrub layer (cover 50%, mean height 5 m):
Betula pendula, *Quercus* spec., few *Pinus sylvestris*
– herb layer (cover 75%):
Avenella flexuosa (dom.) *Vaccinium myrtillus*, *Rumex acetosella*, *Rubus* spec. *Epilobium angustifolium*, *Betula pendula*, *Quercus* spec.
– moss and lichen layer (cover 5%)
– litter layer (10%, 1 cm)
– dead wood on ground (5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 17.60°C, T_{MEAN} 13.32°C, F (moisture) 4.70, N (nutrients) 4.30, R (Ca^{++}) 2.30, M 2, PD 750, S 0

Ant species	nests / 100 m²
Leptothorax acervorum	99.80
Leptothorax muscorum	79.40
Leptothorax gredleri	40.70
Lasius niger	25.00
Lasius platythorax	25.00
Myrmica ruginodis	18.30
Harpagoxenus sublaevis	6.10
Myrmica scabrinodis	5.00
Myrmica rubra	5.00
Myrmica lobicornis	3.30
Myrmica schencki	3.30
Formica fusca 12.	1.70
total	312.60

Species richness index S_{100} : 13.33 species / 100 m².
The plot had developed to a true woodland in 2010.

SP 55: Buchen-Mischwald Stadtwald Zwickau

Habitat type: beech forest mixed with other broad-leafed trees
Date of investigation: 25 May 1980 and June 1980
Situation: 1.75 km WNW of the church of Zwickau-Weissenborn, 50.7428°N, 12.4528°E, 320 m
Plot size: S-area m², Q-area 400 m², habitat size: 2.6 ha
Orography (slope and orientation of surface): 0°
Soil conditions: sandy loam above New Red (Rotliegendes). 20 cm Ah horizon.
Comments: due to lack of indicator plants, the values of F, N and R were determined by comparison with other beech forests of similar structure.
Vegetation:
– tree layer (cover 95%, about 50 years old):
Fagus sylvatica 67, *Acer pseudoplatanus*, *Acer platanoides*, *Ulmus* spec., *Quercus rubra* (all together)
– shrub layer (cover 20%,mean height 2 m):
Acer pseudoplatanus, *Acer platanoides*
– herb layer (cover 0.01%):
few *Maianthemum bifolium*
– moss and lichen layer (cover 5%)
– litter layer (90%, 7 cm)
– dead wood on ground (0.5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 12.90°C, T_{MEAN} 12.20°C, F (moisture) 5.30, N (nutrients) 5.70, R (Ca^{++}) 5.30, M 2, PD 0, S 0

Ant species	nests / 100 m²
Myrmica ruginodis 1.	0.50
total	0.50

Species richness index S_{100} 0.50 species / 100 m².
The density is a guess. Nests were not found but at two distant spots within 400 m² of the Q-area two foraging worker were caught.

SP 56: Buchenaltholz Landeskrone bei Görlitz

Habitat type: 103-years-old beech wood
Date of investigation: May-July 1983
Situation: lower SSE slope of the Landeskrone, 51.1274°N, 14.9356°E, 300 m
Plot size: S-area 40 m², Q-area 2000 m² (estimated), habitat size: 3 ha
Orography (slope and orientation of surface): 5° SSE
Soil conditions: brown earth with 30 cm Ah horizon.
Comments: no autochthonous beech forest, planted in 1883 on a pasture.
Vegetation:
– tree layer (cover 85%, mean height 40 m):
Fagus sylvatica
– shrub layer (cover 5%):
Acer pseudoplatanus
– herb layer (cover 15%):
Hedera helix, *Impatiens parviflora*, *Corydalis intermedia*, *Melica nutans*, *Galium odoratum*
– litter layer (95%, 15 cm)
– dead wood on ground (0.5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 12.80°C, T_{MEAN} 12.24°C, F (moisture) 5.00, N (nutrients) 5.60, R (Ca^{++}) 7.00, M 2, PD 300, S 0

Ant species		nests / 100 m²
Myrmica ruginodis		0.10
Lasius brunneus		0.05
Lasius fuliginosus		0.05
Lasius umbratus	4.	0.05
total		0.25

Species richness index S_{100} : 0.25 species / 100 m².
No ant nests were found on the S-area. A total of five nests was found during SI-search in exposed dead wood and tree trunks. The area crossed during this search was roughly estimated to be 2000 m².

SP 57: Fichtenmonokultur Stadtwald Zwickau

Habitat type: colline spruce forest
Date of investigation: June 1979
Situation: 2.35 km WSW of the church of Zwickau-Weissenborn, 50.7426°N, 12.4442°E, 340 m
Plot size: S-area 20 m², Q-area 250 m², habitat size: 5 ha
Orography (slope and orientation of surface): 0°
Soil conditions: 8 cm raw humus over sandy-loam over New Red (Rotliegendes). R = 3.0
Comments: There was a slight smoke damage of spruce.
Vegetation:
– tree layer (cover 80%, 55-years-old):
Picea abies 92, *Betula pendula* 4, *Quercus* spec. 4
– herb layer (cover 10%):
Avenella flexuosa 97, *Sambucus nigra* 1, *Vaccinium myrtillus* 1, *Dryopteris filix-mas* 1, *Maianthemum bifolium*
– moss and lichen layer (cover 10%)
– litter layer (55%, 2 cm)
– dead wood on ground (5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 14.40°C, T_{MEAN} 12.49°C, F (moisture) 5.00, N (nutrients) 5.30, R (Ca^{++}) 3.00, M 2, PD 150, S 0.01

Ant species		nests / 100 m²
Myrmica ruginodis	1.	2.00
total		2.00

Species richness index S_{100} 1.00 species / 100 m².

Three nests in pieces of dead oak wood, one in dead birch wood, one under stone – i.e., a small percentage of deciduous trees increases nest density.

SP 58: Eichen-Hainbuchen-Wald im Hakel

Habitat type: oak-hornbeam forest
Date of investigation: 27 May 1979 and June 1979
Situation: Hedersleben 4.5 km E, 51.8595°N, 11.3158°E, 200 m, vic. Aschersleben
Plot size: S-area 120 m², Q-area 120 m², habitat size: many ha
Orography (slope and orientation of surface): 0°
Soil conditions: loess-rendzina over limestone
Comments: 30-70 m away from forest margin, mean distance of stems 4 m, old wood.
Vegetation:
– tree layer (cover 70%):
Quercus spec. 3, *Carpinus betulus* 1
– herb layer (cover 98%):
Anemone nemorosa, *Stellaria holostea*, *Aegopodium podagraria*, *Viola* spec., *Galium sylvaticum*, *Polygonatum multiflorum*, *Fragaria vesca*, *Daphne mezereum*
– moss and lichen layer (cover 2%)
– litter layer (50%, 5 cm)
– dead wood on ground (5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 14.00°C, T_{MEAN} 12.45°C, F (moisture) 5.00, N (nutrients) 5.50, R (Ca^{++}) 6.60, M 2, PD 1900, S 0

Ant species	nests / 100 m²
Myrmica ruginodis	19.20
Lasius brunneus	7.50
Myrmica rubra	4.20
Lasius fuliginosus	1.70
Lasius umbratus 5.	1.70
total	34.30

Species richness index S_{100} : 4.83 species / 100 m².

SP 59: Eichenkrüppelwald Koberbachtalsperre Langenhessen

Habitat type: stunted-growth oak wood
Date of investigation: September 1979, August 1980, July 1981
Situation: Langenhessen(church) 1.2 km W, 50.7712°N, 12.3534°E, 280 m, vic. Werdau
Plot size: S-area 100 m², Q-area 500 m², habitat size: 2 ha
Orography (slope and orientation of surface): 27° WSW
Soil conditions: raw soil over erroded New Red (Rotliegendes), only a thin humus layer on 50% of surface.
Comments: steep slope at eastern shore of the reservoir Koberbachtalsperre established in 1929. In that time the area was completely bare New Red. The 45-years-old oaks were planted, probably without amelioration, and grow very slowly and stunted. There is quite many dead wood in situ and less so on ground.
Vegetation:
– tree layer (cover 50%, mean height 8 m):
Quercus spec. 90, *Betula pendula* 5, *Carpinus betulus* 5
– shrub layer (cover 5%):
Prunus spinosa, *Rosa* spec.
– herb layer (cover 40%):
Avenella flexuosa 95, *Veronica officinalis*, *Rumex acetosella*, *Veronica hederifolia*, *Galium mollugo*, *Myosotis stricta*, *Silene nutans*, *Taraxacum officinale*, *Veronica chamaedrys*, *Hieracium sabaudum*, *Luzula multiflora*, *Lychnis viscaria*
– moss and lichen layer (cover 13%)
– litter layer (10%, 2 cm)
– dead wood on ground (2%)
– physico-chemical factors, plant and stone density:
T_{MAX} 17.70°C, T_{MEAN} 13.41°C, F (moisture) 4.10, N (nutrients) 3.70, R (Ca^{++}) 4.10, M 4, PD 500, S 0

Ant species	nests / 100 m²

Temnothorax unifasciatus	30.00
Formica fusca	28.50
Leptothorax gredleri	27.00
Myrmica rubra	19.00
Temnothorax nylanderi	18.60
Lasius platythorax	15.60
Leptothorax acervorum	12.60
Myrmica ruginodis	9.00
Lasius niger	5.20
Leptothorax muscorum	4.00
Tetramorium impurum	3.00
Myrmica sabuleti	2.00
Myrmica lobicornis	2.00
Stenamma debile	2.00
Camponotus ligniperda	1.50
Formica sanguinea	0.40
Lasius fuliginosus	0.30
Formica cunicularia 18.	0.20
Total	180.90

Species richness index S_{100} 14.37 species / 100 m².

SP 60: Kiefernaltholz bei Mosel

Habitat type: old *Pinus sylvestris* wood
Date of investigation: 28 and 29 June 1980
Situation: Mosel (church)-2.2 km WSW, 50.773°N, 12.446°E, 300 m
Plot size: S-area 71 m², Q-area 71 m², habitat size: many ha
Orography (slope and orientation of surface): 0°
Soil conditions: 10 cm Ah horizon over silty to sandy fine gravel with clay layer 30 cm below surface.
Comments:
Vegetation:
– tree layer (cover 50%):
Pinus sylvestris
– shrub layer (cover 1%):
Sambucus nigra, *Quercus* spec., *Sorbus aucuparia*
– herb layer (cover 100%):
Avenella flexuosa (dominant, forming a dense turf), *Trientalis europaea* (subdom.), *Quercus* spec., *Sorbus aucuparia*, *Sambucus nigra*, *Vaccinium myrtillus*, *Digitalis purpurea*, *Rumex acetosa* (all in few plants)
– moss and lichen layer (cover 1%)
– litter layer (10%, 2 cm)
– dead wood on ground (2%)
– physico-chemical factors, plant and stone density:
T_{MAX} 16.40°C, T_{MEAN} 13.05°C, F (moisture) 5.00, N (nutrients) 5.60, R (Ca^{++}) 2.90, M 2, PD 100, S 0

Ant species	nests / 100 m²
Myrmica ruginodis	8.40
Lasius platythorax 2.	5.60
total	14.00

Species richness index S_{100} : 2.14 species / 100 m².

SP 61: Kiefernaltholz bei Dänkritz

Habitat type: old *Pinus sylvestris* forest
Date of investigation: 28 July 1979
Situation: Dänkritz-Schmiede-0.6 km SSW, 50.771°N, 12.426°E, 300 m, vic. Zwickau
Plot size: S-area 52 m², Q-area 52 m², habitat size: 8 ha
Orography (slope and orientation of surface): 0°
Soil conditions: 8 cm raw humus over silty to sandy fine gravel, a clay layer 60 cm below surface.
Comments:

Vegetation:
– tree layer (cover 50%, appr. 65 years old):
Pinus sylvestris
– shrub layer (cover 15%):
Pinus sylvestris, *Betula pendula*, *Quercus* spec., *Sambucus nigra*
– herb layer (cover 15%):
Vaccinium myrtillus, *Avenella flexuosa* (in few horsts), *Digitalis purpurea*, *Sorbus aucuparia*, *Epilobium angustifolium*
– moss and lichen layer (cover 5%)
– litter layer (95%, 2 cm)
– dead wood on ground (3%)
– physico-chemical factors, plant and stone density:
T_{MAX} 17.60°C, T_{MEAN} 13.37°C, F (moisture) 4.70, N (nutrients) 5.80, R (Ca^{++}) 2.80, M 2, PD 300, S 0

Ant species	nests / 100 m²
Leptothorax muscorum	17.30
Leptothorax acervorum	15.40
Myrmica ruginodis	5.80
Lasius platythorax 4.	3.80
total	42.30

Species richness index S_{100} : 4.59 species / 100 m².

SP 62: Kieferntrockenwald bei Daubitz
Habitat type: dry *Pinus sylvestris* forest
Date of investigation: 4 June 1981 and 16 July 1981
Situation: Daubitz(church)-4.65 km ENE, 51.4125°N, 14.8900°E, 155 m,
Plot size: S-area 40.8 m², Q-area 250 m², habitat size: 2000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: 10 cm raw humus over 20 cm humous sand over pleistocenic, aeolic dune sand.
Comments: the plot is situated on the top of the dune north of the Waldteich.
Vegetation:
– tree layer (cover 50%):
Pinus sylvestris (90 years, diameter at breast height [DBH] 22-28 cm, height 20 m)
– herb layer (cover 0.1%):
few *Calluna vulgaris*, *Quercus* spec., *Vaccinium myrtillus*, *Calamagrostis epigejos*
– moss and lichen layer (cover 50%)
– litter layer (95%, 2 cm)
– dead wood on ground (12%)
– physico-chemical factors, plant and stone density:
T_{MAX} 22.10°C, T_{MEAN} 14.92°C, F (moisture) 3.60, N (nutrients) 2.00, R (Ca^{++}) 1.70, M 2, PD 50, S 0

Ant species	nests / 100 m²
Temnothorax crassispinis	85.80
Lasius platythorax	15.90
Stenamma debile	7.40
Myrmica ruginodis	4.90
Leptothorax acervorum	2.50
Formica fusca	1.60
Formica sanguinea	0.40
total	118.50

Species richness index S_{100} 6.00 species / 100 m².

SP 63: Kiefern-Blaubeer-Wald bei Daubitz
Habitat type: Pine-Blueberry forest
16 July 1981 and 2 June 1982
Situation: Daubitz(church)-4.65 km ENE, 51.4140°N, 14.8900°E, 151 m
Plot size: S-area 39.6 m², Q-area 250 m², habitat size: 1 ha
Orography (slope and orientation of surface): 4° NW
Soil conditions: 10 cm raw humus over 20 cm humous sand over pleistocenic, aeolic dune sand.
Comments: north of SP 62 in a sink between to two dune courses, nearer to groundwater

Vegetation:
– tree layer (cover 50%):
Pinus sylvestris (90 years old, diameter breast height [DBH] 24-33 cm, height 23 m)
– herb layer (cover 50%):
Vaccinium myrtillus 80, *Vaccinium vitis-idaea* 10, *Calluna vulgaris* 20, *Pinus sylvestris* 2
– moss and lichen layer (cover 45%)
– litter layer (45%, 2 cm)
– dead wood on ground (1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 16.40°C, T_{MEAN} 13.58°C, F (moisture) 4.3, N (nutrients) 2.00, R (Ca^{++}) 1.70, M 2, PD 700, S 0

Ant species	nests / 100 m²
Temnothorax crassispinis	68.20
Lasius platythorax	22.70
Leptothorax muscorum	15.20
Leptothorax acervorum	12.60
Myrmica ruginodis	11.40
Myrmica rubra	7.60
Stenamma debile	7.60
Formica fusca	5.00
Temnothorax unifasciatus	2.50
Formica sanguinea	1.20
total	154.00

Species richness index S_{100} 10.67 species / 100 m².

SP 64: Felstrockenflur Selketal
Habitat type: xerothermous herb community on rock
Date of investigation: 10 May**,** 11 May and 18 May 1980
Situation: Meisdorf-3.5 km SW, 51.6853°N, 11.2544°E and 51.6857°N, 11.2644°E, 260 m
Plot size: S-area 32 m², Q-area 100 m², habitat size: 2000 m²
Orography (slope and orientation of surface): 33° S
Soil conditions: protosoil over graywacke, 60% of surface with bare rock, remaining surface with homous soil of 3 cm average thickness (in clefts thicker).
Comments: Added data of two very similar plots 0.45 kmW and 0.85 km WNW of the Falkenstein castle.
Vegetation:
– herb layer (cover 18%):
Festuca ovina-group and other grasses together 45% of all plants. *Euphorbia cyparissias*, *Thymus* spec., *Artemisia campestre*, *Genista tinctoria*, *Potentilla tabernaemontani*, *Sedum reflexum*, *Hieracium pilosella*, *Spergula morisonii*, *Myosotis stricta*
– moss and lichen layer (18%, 2 cm)
Politrichum piliferum and *Ceratodon purpureus* (together 45)
– litter layer (0%, 1 cm)
– dead wood on ground (0%)
– physico-chemical factors, plant and stone density:
T_{MAX} 31.00°C, T_{MEAN} 15.71°C, F (moisture) 2.80, N (nutrients) 1.90, R (Ca^{++}) 5.00, M 3, PD 180, S 6

Ant species	nests / 100 m²
Temnothorax interruptus	70.00
Solenopsis fugax	65.60
Tetramorium impurum	60.10
Lasius alienus	50.80
Lasius myops	6.10
Temnothorax unifasciatus	4.70
Myrmica sabuleti	3.10
Myrmica schencki	3.10
Formica fusca	1.50
Lasius emarginatus 10.	1.50
total	266.50

Species richness index S_{100} 10.58 species / 100 m².

A visit after 22 years (16 May 2002) showed a very strong tread and grazing pressure by an increased mouflon population. There was almost no loose stone at surface that was not moved by the mouflons. Furthermore, *Formica sanguinea*, having a density of 5 nests /1000 m², had erradicated nearly all *Serviformica* in the area.

SP 65: Krüppeleichenwald auf Fels im Selketal

Habitat type: stunted-growth oak wood on rock
Date of investigation: 4 May**,** 10 May and 3 September 1980
Situation: Meisdorf-3.5 km SW, 51.6853°N, 11.2544°E and 51.6857°N, 11.2644°E, 270 m
Plot size: S-area 29.2 m², Q-area 172 m², habitat size: 4000 m²
Orography (slope and orientation of surface): 35° S
Soil conditions: protosoil over graywacke, 25% of surface with bare rock, remaining surface with humous soil of 3 cm average thickness (in clefts thicker).
Comments: Added data of two very similar plots 0.45 kmW and 0.85 km WNW of the Falkenstein castle.
Vegetation:
– tree layer (cover 28%):
Quercus spec.
– shrub layer (cover 10%):
Prunus spinosa, *Crataegus* spec.
– herb layer (cover 60%):
Festuca ovina-group (among other indet. grasses), *Achillea millefolium pannonica*, *Sedum maximum*, *Hypericum perforatum*, *Euphorbia cyparissias*, *Stellaria holostea*, *Primula veris*, *Veronica hederifolia*, *Sedum reflexum*, *Genista tinctoria*, *Hieracium pilosella*, *Calluna vulgaris*, *Lilium martagon*
– moss and lichen layer (2%, 2 cm)
– litter layer (13%, 1 cm)
Quercus leafs
– dead wood on ground (3%)
– physico-chemical factors, plant and stone density:
T_{MAX} 25.30°C, T_{MEAN} 14.46°C, F (moisture) 3.50, N (nutrients) 3.10, R (Ca^{++}) 5.20, M 3, PD 800, S 6

Ant species	nests / 100 m²
Temnothorax parvulus	94.80
Lasius alienus	94.20
Temnothorax unifasciatus	26.90
Temnothorax nylanderi	18.70
Tetramorium impurum	13.70
Stenamma debile	13.70
Solenopsis fugax	10.30
Lasius brunneus	4.40
Myrmica sabuleti	3.30
Camponotus ligniperda	2.30
Lasius platythorax	1.40
Lasius emarginatus 12.	1.00
total	284.70

Species richness index S_{100} 12.60 species / 100 m².
A visit after 22 years (16 May 2002) showed a very strong tread and grazing pressure by an increased mouflon population. There was almost no loose stone at surface that was not moved by the mouflons.

SP 66: Eichentrockenwald im Selketal

Habitat type: xerothermous oak forest
Date of investigation: Mai 1980 and 3 September 1980
Situation: Meisdorf-3.5 km SW, 51.6863°N, 11.2536°E, 320 m
Plot size: S-area 62 m², Q-area 124 m², habitat size: 1 ha
Orography (slope and orientation of surface): 28° S
Soil conditions: ranker over graywacke, Ah horizon closed, bedrock nowhere reaching to surface. R = 6.0.
Comments: the plot is situated 0.85 km WNW of Falkenstein castle in the transition from the scarp to the plateau above SP 65.

Vegetation:
– tree layer (cover 70%):
Quercus spec.
– herb layer (cover 28%):
Melica nutans, *Anthoxanthum odoratum*, *Hieracium sylvaticum*, *Hypericum perforatum*, *Primula vulgaris*
– moss and lichen layer (13%, 2 cm)
– litter layer (26%, 1 cm)
Quercus leafs
– dead wood on ground (2.5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 18.80°C, T_{MEAN} 12.84°C, F (moisture) 4.20, N (nutrients) 4.00, R (Ca^{++}) 6.00, M 2, PD 500, S 6

Ant species	nests / 100 m²
Temnothorax nylanderi	130.00
Lasius platythorax	33.90
Lasius alienus	16.60
Temnothorax parvulus	10.80
Stenamma debile	8.60
Myrmica ruginodis	6.80
Tetramorium impurum	6.50
Myrmica sabuleti	4.40
Temnothorax affinis	4.00
Dolichoderus quadripunctatus	4.00
Temnothorax unifasciatus	2.20
Camponotus ligniperda	0.80
Tapinoma erraticum 14.	0.80
total	229.40

Species richness index S_{100} 13.89 species / 100 m².

SP 67: Eichentrockenwald in Schutthalde im Selketal

Habitat type: xerothermous oak forest on rubble field
Date of investigation: 18 May 1980 and 23 June 1980
Situation: Meisdorf-3.5 km SW, 51.686°N, 11.253°E, 300 m, vic. Aschersleben
Plot size: S-area 20 m², Q-area 300 m², habitat size: 500 m²
Orography (slope and orientation of surface): 30° S
Soil conditions: rubble field containing some blocks > 15 cm.
Comments: the plot is situated 0.85 km WNW of Falkenstein castle.
Vegetation:
– tree layer (cover 40%):
Quercus spec. (about 3.5 stems /100 m²)
– herb layer (cover 0.2%):
Agrostis tenuis, *Senecio viscosus*, *Galeopsis segetum*
– moss and lichen layer (cover 1%):
Pohlia nutans, *Bryum* spec.
– litter layer (5%, 5 cm)
Quercus leafs in clefts
– dead wood on ground (1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 25.30°C, T_{MEAN} 14.30°C, F (moisture) 3.50, N (nutrients) 3.70, R (Ca^{++}) 3.30, M 2, PD 15, S 40

Ant species	nests / 100 m²
Temnothorax nylanderi	100.00
Temnothorax parvulus	42.50
Lasius platythorax	18.90
Temnothorax unifasciatus	17.50
Lasius brunneus	15.90
Stenamma debile	10.80
Myrmica sabuleti	2.60
Camponotus ligniperda	2.20
Formica fusca	0.70

Dolichoderus quadripunctatus 10.	0.30
total	211.40

Species richness index S_{100} 9.60 species / 100 m².

SP 68: Hainbuchenwald im Selketal

Habitat type: hornbeam wood
Date of investigation: 15 May 1980
Situation: Meisdorf-3.5 km SW, 51.6843°N, 11.2654°E, 230 m, vic. Aschersleben
Plot size: S-area 21.6 m², Q-area 83 m², habitat size: many ha
Orography (slope and orientation of surface): 32° S
Soil conditions: ranker on graywacke with a weak Ah horizon containing much rubble
Comments: due to lack of indicator plants, F, N and R values were estimated by interpolation between the data of SP 65-67 situated above and SP 69 situated below (foot of the slope)
Vegetation:
– tree layer (cover 85%):
Carpinus betulus 90, *Tilia cordata* 5, *Acer campestre* 5
– herb layer (cover 15%):
one indet. grass species
– moss and lichen layer (cover 20%):
– litter layer (40%, 2 cm)
– dead wood on ground (5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 15.50°C, T_{MEAN} 12.62°C, F (moisture) 4.70, N (nutrients) 5.20, R (Ca^{++}) 5.70, M 2, PD 350, S 12

Ant species	nests / 100 m²
Stenamma debile	27.80
Temnothorax nylanderi	27.80
Lasius brunneus	23.10
Myrmica ruginodis	9.30
Tetramorium impurum (foraging workers)	1.20
total	89.20

Species richness index S_{100} 5.43 species / 100 m².
There is obviously a nest of *T. impurum* in this cool habitat because there are no warmer habitats within a distance of 50 m.

SP 69: Hainbuchen-Feldahorn-Wald im Selketal

Habitat type: hornbeam-field-maple wood
Date of investigation: 2 June and 16 August 1980
Situation: Meisdorf-3.5 km SW, 51.6840°N, 11.2653°E, 205 m, vic. Aschersleben
Plot size: S-area 66 m², Q-area 66 m², habitat size: many ha
Orography (slope and orientation of surface): 10° S
Soil conditions: The topsoil is a mixture of 50% greywacke rubble and 50% humous soil.
Comments: the plot is at the foot of a steep slope in transition to the river plane.
Vegetation:
– tree layer (cover 80%):
Carpinus betulus, *Acer campestre*
– herb layer (cover 40%):
Ranunculus ficaria, *Anemone nemorosa*, *Alliaria petiolata*, *Stellaria holostea*, *Veronica hederifolia*, *Ranunculus* spec., *Urtica dioica*
– moss and lichen layer (cover 2%):
– litter layer (40%, 3 cm)
– dead wood on ground (8%)
– physico-chemical factors, plant and stone density:
T_{MAX} 14.10°C, T_{MEAN} 12.46°C, F (moisture) 5.60, N (nutrients) 7.20, R (Ca^{++}) 6.60, M 2, PD 350, S 20

Ant species	nests / 100 m²
Stenamma debile	13.80
Lasius brunneus 2.	9.80
total	23.60

Species richness index S_{100} 2.18 species / 100 m².

SP 70: Krüppeleichenwald Ebersbach bei Görlitz

Habitat type: stunted-growth oak wood on graywacke
Date of investigation: 5**,** 8 and 9 July 1981
Situation: NW Görlitz: Ebersbach 1.4 kmW, 51.1927°N, 14.9310°E, 210 m
Plot size: S-area 28 m², Q-area 143 m², habitat size: 300 m²
Orography (slope and orientation of surface): 38°S
Soil conditions: ranker on phyllitic graywacke. 30% of surface are covered by bare rock, 14% by bare soil over rock, 10% by moss, 46% by herbs growing on a thin Ah horizon. In clefts, deeper layers of humous soil and litter.
Comments: the plot shows a tesselated structure with big microclimatic differences.
Vegetation:
– tree layer (cover 40%, mean height 10 m):
Quercus spec.
– herb layer (cover 46%):
Festuca ovina aggr., *Lychnis viscaria*, *Silene nutans*, *Asplenium septentrionale*, *Hieracium pilosella*, *Spergula morisonii*, *Agrostis stolonifera*, *Sedum maximum*, *Rosa* spec.
– moss and lichen layer (10%)
– litter layer (15%, 0.5 to 10 cm in clefts)
– dead wood on ground (5%)
dry twigs and branches, dead oak trunks
– physico-chemical factors, plant and stone density:
T_{MAX} 24.50°C, T_{MEAN} 15.25°C, F (moisture) 3.33, N (nutrients) 2.33, R (Ca^{++}) 3.40, M 2, PD 800, S 6

Ant species	nests / 100 m²
Temnothorax unifasciatus	100.10
Temnothorax nigiceps	41.30
Myrmica sabuleti	35.80
Lasius flavus	25.00
Formica fusca	22.50
Leptothorax acervorum	17.50
Tetramorium impurum	16.10
Lasius emarginatus	14.30
Leptothorax muscorum	8.00
Camponotus ligniperda	7.20
Temnothorax nigriceps x unifasciatus	3.60
Temnothorax crassispinus	1.80
Lasius platythorax	1.00
Myrmica schencki	0.70
Formica rufa 14.	0.03
total	294.93

Species richness index S_{100} 13.45 species / 100 m².
A visit after 21 years (18 April 2002) showed a strong increase of scrubs at the foot of the scarp reaching a height of 1.5-3 m (*Sambucus*, *Rosa*) The tree and herb layer was more developed. The following ant nests were found: *sabuleti* 9.5, *crassispinus* 5, *fusca* 4, *impurum* 4, *platythorax* 3, *rubra* 1, *unifasciatus* 1, *nigriceps* 1, *muscorum* 1, *acervorum* 1, *Hypoponera punctatissima* 1 (one dead worker in a rock cleft !). *Formica rufa* 3 monogynous nests on an area of 60 x 60 m.

SP 71: Eichenkrüppelwald auf der Bosel bei Meissen

Habitat type: stunted-growth oak wood on granite
Date of investigation: 9 June**,** 10 June and 27 July 1982
Situation: Sörnewitz 0.9 km NW, 51.1380°N, 13.5148°E, 170 m, vic.Meissen
Plot size: S-area 70 m², Q-area 100 m², habitat size: 1000 m²
Orography (slope and orientation of surface): 20° S
Soil conditions: syrosem and ranker on granite, solid bare rock rarely exposed.
Comments: near to the Botanic Garden.
Vegetation:
– tree layer (cover 60%):
Quercus spec. (stunted-grown, about 4 m high)
– herb layer (cover 60%):

Avenella flexuosa 150, *Anthoxanthum odoratum* 20, *Anthericium liliago* 5, *Polygonatum odoratum*, *Hieracium sabaudum*
– moss and lichen layer (13%)
– litter layer (13%)
– dead wood on ground (2%)
– physico-chemical factors, plant and stone density:
T_{MAX} 22.00°C, T_{MEAN} 14.69°C, F (moisture) 3.50, N (nutrients) 2.50, R (Ca^{++}) 5.20, M 2, PD 700, S 2.5

Ant species	nests / 100 m²
Temnothorax unifasciatus	102.80
Lasius alienus	94.10
Temnothorax parvulus	63.80
Temnothorax crassispinus	46.10
Tetramorium impurum	38.20
Temnothorax affinis	35.20
Lasius emarginatus	29.40
Formica fusca	8.80
Camponotus ligniperda	2.90
Temnothorax saxonicus	2.40
Myrmica rugulosa	2.00
Camponotus fallax	1.40
Solenopsis fugax	1.40
Myrmica schencki 14.	1.00
total	429.50

Species richness index S_{100} : 13.99 species / 100 m².
Temnothorax affinis 19 nests on 6 oaks with a vertical crown projection of 54 m² and 137 m³ canopy volume.

SP 72: Basaltrockenflur Rotstein bei Sohland

Habitat type: xerothermous herb community on basalt
Date of investigation: 15 April**,** 27 April and 17 May 1981
Situation: Sohland (church)-1.65 km SW, 51.1042°N, 14.7653°E, 440 m
Plot size: S-area 28 m², Q-area 55 m², habitat size: 400 m²
Orography (slope and orientation of surface): 29° S (overall, not considering the step-like surface)
Soil conditions: bare basalt rock, arranged in big steps, covers 55% of surface and humous soil 45%
Comments:
Vegetation:
– herb layer (cover 32%):
Festuca ovina (dom.), *Potentilla argentea*, *Lathyrus sylvestris*, *Sedum maximum*, *Cerastium arvense* (subdom.), *Rumex acetosella*, *Galium mollugo*, *Vincetoxicum hirundinaria*, *Sedum spurium*
– moss and lichen layer (cover 5%)
– litter layer (0%)
– dead wood on ground (0.1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 30.60°C, T_{MEAN} 15.35°C, F (moisture) 3.10, N (nutrients) 2.20, R (Ca^{++}) 5.30, M 3, PD 350, S 2

Ant species	nests / 100 m²
Temnothorax unifasciatus	62.00
Tetramorium impurum	53.70
Temnothorax nigriceps	13.20
Myrmica schencki	3.60
Camponotus ligniperda	3.60
Formica fusca 6.	1.80
total	137.90

Species richness index S_{100} 6.72 species / 100 m².
Strong encroachment of *Prunus* and *Rosa* in 2010. Moss and lichen layer have strongly developed.

SP 73: Basaltrockenflur Landeskrone

Habitat type: xerothermous herb community on basalt

Date of investigation: 7 May**,** 15 May and 23 September 1981
Situation: Görlitz-5.3 km SW, 51.1278°N, 14.9334°E, 370 m
Plot size: S-area 26 m², habitat size: 400 m²
Orography (slope and orientation of surface): 35°S (overall, not considering the step-like surface)
Soil conditions: Bare basalt rock, arranged in steps, covers 50% of surface. Humous soil on 50% of surface, in clefts very deep and eutrophied by human feces.
Comments: strongly affected by droppings of excursionists and visitors of the restaurant on the top of the Landeskrone.
Vegetation:
– shrub layer (cover 4%, mean height 1 m):
Prunus spinosa, *Rosa canina*
– herb layer (cover 39%):
Cerastium arvense, *Hieracium pilosella*, *Festuca ovina* aggr., *Sedum spurium*, *Thymus pulegioides*, *Sedum maximum*, *Asplenium septentrionale*, *Agrostis tenuis*, *Vincetoxicum hirundinaria*, *Galium mollugo*, *Hypericum perforatum*, *Rumex acetosella*, *Lathyrus silvestris*, *Silene nutans*
– moss and lichen layer (11%, 1 cm)
– litter layer (0%)
– dead wood on ground (0.1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 30.90°C, T_{MEAN} 15.94°C, F (moisture) 3.40, N (nutrients) 2.50, R (Ca^{++}) 5.10, M 4, PD 500, S 3

Ant species	nests / 100 m²
Temnothorax unifasciatus	119.20
Temnothorax nigriceps	38.40
Tetramorium impurum	30.80
Lasius flavus	26.90
Ponera coarctata	11.50
Lasius emarginatus	7.70
Myrmica schencki	7.70
Formica fusca	7.70
Myrmica sabuleti	7.70
Lasius paralienus	7.70
Myrmecina graminicola	3.80
Formica sanguinea 12.	0.20
total	269.30

Species richness index S_{100} : 14.92 species / 100 m².
A follow-up investigation of the soil-covered parts of the plot after 21 years (19 April 2002) resulted in the following nest findings: 7 *impurum*, 5 *flavus*, 4 *unifasciatus*, 3 *fusca*, 3 *sabuleti*, 2 *paralienus*, 1 *emarginatus*. The overall character was comparable to 1981. In about 1991 there was a removal of scubs. A fecal pollution of the soil was olfactorily no longer detectable.

SP 74: Basaltwände Landeskrone bei Görlitz

Habitat type: scarp face of basalt rock
Date of investigation: 1 April**,** 5 April 1982
Situation: Görlitz-5.3 km SW, 51.1274°N, 14.9334°E, 350 m and 51.1281°N, 14.9316°E, 370 m
Plot size: S-area 47 m² (vertically measured!), habitat size: 100 m²
Orography (slope and orientation of surface): 85°SSW (nearly perpendicular)
Soil conditions: scarp face of basalt rock, only in clefts with little soil material and scattered vascular plants.
Comments: below SP 73. Scarp face of basalt generated by road construction. Data added from two subareas: a S-facing subarea was in penumbra of trees and a SW-facing was fully sun-exposed.
Vegetation:
– herb layer (cover 5%):
Sedum spurium, *Asplenium septentrionale*, *Silene nutans*, *Lychnis viscaria*
– moss and lichen layer (1%)
– litter layer (0%)
– dead wood on ground (0%)
– physico-chemical factors, plant and stone density:
T_{MAX} 25.70°C, T_{MEAN} 14.73°C, F (moisture) 3.00, N (nutrients) 2.30, R (Ca^{++}) 5.00, M 1, PD 50, S 0

Ant species	nests / 100 m²

Temnothorax nigriceps	25.50
Temnothorax unifasciatus	23.40
Lasius emarginatus	19.10
Lasius flavus	6.40
Formica fusca	3.20
Tetramorium impurum 6.	2.10
total	79.70

Species richness index S_{100} : 7.04 species / 100 m².

SP 75: Schlehengebüsch Landeskrone

Habitat type: blackthorn scrub on basalt
Date of investigation: 6 April 1982, 20, 24 and 26 April 1983
Situation: Görlitz-5.4 km SW, 51.1278°N, 14.9333°E, 375 m
Plot size: S-area 26 m², Q-area 200 m², habitat size: 500 m²
Orography (slope and orientation of surface): SW 15° (0-30°)
Soil conditions: ranker over basalt, soil strongly contaminated by human excretions, basalt freely exposed on 20% of surface.
Comments: strongly affected by droppings of excursionists and visitors of the restaurant on the top of the Landeskrone.
Vegetation:
– tree layer (cover 5%, mean height 8 m):
one *Fraxinus excelsior* tree
– shrub layer (cover 70%, mean height 1.5 m):
Prunus spinosa 21, *Crataegus* spec. 2, *Rosa* spec. 1
– herb layer (cover 75%):
Poa nemoralis 56, *Sedum spurium* 15, *Sedum telephium*, *Veronica hederifolia*, *Galium mollugo*, *Festuca* spec.
– moss and lichen layer (5%, 3 cm)
– litter layer (1%)
– dead wood on ground (4%)
twigs and branches of 1.5-15 cm diameter
– physico-chemical factors, plant and stone density:
T_{MAX} 18.10°C, T_{MEAN} 13.08°C, F (moisture) 4.20, N (nutrients) 4.00, R (Ca^{++}) 6.70, M 2, PD 1200, S 0

Ant species	nests / 100 m²
Temnothorax crassispinis	76.90
Myrmica sabuleti	50.00
Lasius flavus	34.60
Formica fusca	26.90
Temnothorax unifasciatus	23.10
Myrmecina graminicola	5.80
Lasius niger	3.80
Stenamma debile	3.80
Myrmica hirsuta	3.80
Myrmica ruginodis	0.50
Tetramorium impurum	0.50
Temnothorax nigriceps	0.50
Formica rufa x polyctena 13.	0.20
total	230.40

Species richness index S_{100} 11.72 species / 100 m².
Due to difficulties to control nests in turf and too early date of investigation, *M.hirsuta* was not discovered in the *M. sabuleti* nests. Yet, 3 males and 6 gynes caught in pitfall traps in 1982 give a clear indication for nesting of the species on the plot. A follow-up investigation of the soil-covered parts of the plot after 20 years (19 April 2002) resulted in the following nest findings: 2 *flavus*, 3 *fusca*, 6 *sabuleti*, 5 *crassispinus* and a small *F. rufa*-Nest. The overall character was comparable to 1982. A fecal pollution of the soil was olfactorily no longer detectable.

SP 76: Carpinus-Quercus-Tilia-Wald Landeskrone bei Görlitz

Habitat type: hornbeam-oak-linden forest

Date of investigation: 12 and 19 May 1982
Situation: Görlitz-5.4 km SW, 51.1275°N, 14.9316°E, 340 m, at the upper course of the Südweg.
Plot size: S-area 52.4 m², Q-area 52.4 m², habitat size: 1.5 ha
Orography (slope and orientation of surface): 20° S
Soil conditions: thick layer of humous soil over basalt, no freely exposed basalt rock on soil surface.
Vegetation:
– tree layer (cover 85%):
Carpinus betulus 75, *Quercus robur* 20, *Tilia cordata* 5
– shrub layer (cover 1%):
Acer platanoides
– herb layer (cover 90%):
Poa nemoralis 760, *Melica nutans* 190, *Lamium galeobdolon* 29, *Acer platanoides* 14, *Cystopteris fragilis* 1, *Pulmonaria officinalis* 1, *Ranunculus ficaria*
– moss and lichen layer (cover 2%)
– litter layer (cover 65%, 2 cm)
– dead wood on ground (cover 10%)
– physico-chemical factors, plant and stone density:
T_{MAX} 13.80°C, T_{MEAN} 12.09°C, F (moisture) 5.20, N (nutrients) 5.20, R (Ca^{++}) 6.60, M 2, PD 1500, S 0.01

Ant species	nests / 100 m²
Myrmica ruginodis	7.60
Temnothorax crassispinis	5.70
Lasius brunneus 3.	3.80
total	17.10

Species richness index S_{100} : 3.44 species / 100 m².

SP 77: Felstrockenflur bei Zadel

Habitat type: xerothermous grassland on granite
Date of investigation: 7 June 1982
Situation: Zadel (church)-0.6 km SE, 51.1917°N, 13.4392°E, 130 m
Plot size: S-area 25 m², Q-area 50 m², habitat size: 3000 m²
Orography (slope and orientation of surface): 32° SW
Soil conditions: ranker with loess-loam over granite, bare rock exposed in few patches only.
Comments: no use for a longer time. Probably sheep and goat grazing until the 1960s. Progressive scrub encroachment at the upper and lower margin of the plot.
Vegetation:
– shrub layer (cover 20%):
Rosa spec., *Rubus* spec.
– herb layer (cover 30%):
Festuca (*ovina*-group), *Potentilla argentea* 20, *Dactylis glomerata* 10, *Echium vulgare* 4, *Bromus tectorum* 3, *Spergula rubra* 3, *Erodium cicutarium* 1.
– moss and lichen layer (20%)
– physico-chemical factors, plant and stone density:
T_{MAX} 30.20°C, T_{MEAN} 16.72°C, F (moisture) 3.57, N (nutrients) 3.80, R (Ca^{++}) 4.25, M 2, PD 700, S 0.5

Ant species	nests / 100 m²
Tetramorium impurum	37.00
Lasius alienus	20.00
Myrmica specioides	8.00
Lasius emarginatus	8.00
Formica rufibarbis	6.00
Formica cunicularia	6.00
Solenopsis fugax	4.00
Lasius niger	3.00
Camponotus ligniperda 9.	2.00
total	94.00

Species richness index S_{100} : 10.69 species / 100 m².
An inspection after 20 years (30 May 2002) showed a strong scrub encroachment (*Lycium*, *Ligustrum*, *Syringa*, *Rosa*) and the herb layer was strongly developed (cover 90%, PD 4000). The following ant nest were found: *impurum* 12, *alienus* 15, *specioides* 1, *fugax* 1, *rufibarbis* 3, *ligniperda* 2, *cunicularia* 1, *niger* 1.

SP 78: Felstrockenflur auf dem Göhrisch

Habitat type: xerothermous plant community on granite
Date of investigation: 28 and 30 July 1982
Situation: Niedermuschütz-1.2 km NE, 51.2261°N, 13.4111°E, 140 m
Plot size: S-area 34 m², Q-area 34 m², habitat size: 200 m²
Orography (slope and orientation of surface): 30 °SSW
Soil conditions: syrozem on granite, with a loose cover of grit and without humus.
Comments:
Vegetation:
– shrub layer (cover 1%):
single *Quercus*
– herb layer (cover 25%):
Deschampsia flexuosa 100, *Anthericium liliago* 15, *Hieracium pilosella*, *Senecio vulgaris*, *Rumex acetosella*
– moss and lichen layer (5%, 0.5 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 32.10°C, T_{MEAN} 17.09°C, F (moisture) 3.60, N (nutrients) 3.00, R (Ca^{++}) 3.00, M 2, PD 250, S 20

Ant species	nests / 100 m²
Lasius alienus	67.60
Solenopsis fugax	44.10
Myrmica specioides	26.50
Tetramorium impurum	14.70
Myrmica rugulosa	11.80
Lasius emarginatus	11.80
Formica cunicularia	2.90
Ponera testacea	2.90
Formica fusca 9.	2.90
total	185.20

Species richness index S_{100} 11.40 species / 100 m².
An inspection after 20 years (30 May 2002) showed only little structural change of the plot. The following ant nests were found: *impurum* 5, *specioides* 4, *alienus* 3, *fugax* 3, *emarginatus* 1

SP 79: Eichentrockenwald Löbauer Berg

Habitat type: xerothermous oak wood on basalt
Date of investigation: 10 May, 16 May and 6 July 1983
Situation: Löbau-2 km ESE, 0.2 km S of Eiserner Turm, immediately below the brick building, 51.0894°N, 14.6925°E, 410-430 m
Plot size: S-area 40.2 m², Q-area 104 m², habitat size: 400 m²
Orography (slope and orientation of surface): 40°SSW (overall, not considering the step-like surface)
Soil conditions: fine-grained feldspathic basalt (nepheline dolerite) with bare or lichen-covered surface, arranged in big steps, covers 55% of surface. Humous soil of very variable thickness on 45% of surface, in clefts very deep.
Comments: despite the high sulphur dioxide immissions in the 1980s the feldspathic basalt was partially lichen-covered in contrast to the smooth basalt and phonolite rock in neighboring mountains which were completely bare.
Vegetation:
– tree layer (cover 33%):
Quercus robur 95, *Pinus silvestris* 5
– shrub layer (cover 10%):
Prunus spinosa 5, *Crataegus* spec. 1, *Rosa* spec. 2, *Fraxinus excelsior* 2
– herb layer (cover 45%):
Vincetoxicum hirundinaria 10, *Lychnis viscaria* 8, *Sedum spurium* 40, *Sedum maximum* 1, *Hieracium pilosella* 2, *Hieracium sylvaticum* 1, *Agrostis tenuis* 15, *Festuca rupicola* 3, *Hieracium sabaudum* 0.5, *Campanula rotundifolia*
– moss and lichen layer (25%)
– litter layer (cover 15%)
– dead wood on ground (cover 5%)
– physico-chemical factors, plant and stone density:

T_{MAX} 23.40°C, T_{MEAN} 14.08°C, F (moisture) 3.40, N (nutrients) 2.60, R (Ca^{++}) 5.40, M 2, PD 100, S 0

Ant species	nests / 100 m²
Temnothorax unifasciatus	44.00
Temnothorax saxonicus	21.40
Lasius emarginatus	15.50
Myrmica sabuleti	13.10
Ponera coarctata	13.10
Temnothorax crassispinus	10.70
Leptothorax muscorum	7.10
Tetramorium impurum	6.00
Lasius flavus	6.00
Stenamma debile	4.80
Formica fusca	2.40
Myrmica scabrinodis	2.40
Myrmica lobicornis	1.70
Lasius platythorax	1.70
Camponotus ligniperda	1.00
Formica sanguinea	1.00
Myrmica schencki	1.00
Myrmica ruginodis	1.00
Myrmecina graminicola	1.00
Lasius brunneus 20.	0.50
total	155.40

Species richness index S_{100} 19.00 species / 100 m².
During an inspection after 19 years (7 May 2002) the following ant nests were found: 5 *sabuleti*, 4 *coarctata*, 3 *platythorax*, 2 *scabrinodis*, 2 *lobicornis*, 2 *fusca*, 1 *graminicola*, 1 *brunneus*, 1 *ruginodis*. The general structure had not changed but the lichen cover of the rock had increased.

SP 80: Hochmoor Satzung
Habitat type: margin zone of a peat bog
Date of investigation: 29 July 1979
Situation: Satzung 2 km S, 50.515°N, 13.190°E, 850 m, vic. Annaberg-Buchholz
Plot size: Q-area 200 m², habitat size: 1000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: flat peat bog soil in transition to mineral soil.
Comments: The investigation was restricted to the less wet marginal zone of the bog. The very wet, partially flooded, high-grassy inner part did obviously not offer good conditions for ant nesting under the rough montane climate conditions. This requires a well developed sun-exposed moss layer.
Vegetation:
– herb layer (cover 88%):
Eriophorum vaginatum, *Avenella flexuosa*, *Festuca pratensis*, *Calluna vulgaris*, *Vaccinium myrtillus*
– moss and lichen layer (cover 30%)
Sphagnum spec.
– dead wood on ground (cover 0.5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 12.70°C, T_{MEAN} 9.61°C, F (moisture) 7.67, N (nutrients) 2.80, R (Ca^{++}) 1.75, M 1, PD 2900, S 0

Ant species	nests / 100 m²
Myrmica ruginodis	4.00
Myrmica rubra	1.50
Formica sanguinea	1.50
Leptothorax acervorum	1.30
Myrmica scabrinodis 5.	1.00
total	9.30

Species richness index S_{100} 4.41 species / 100 m².

SP 81: Quellmoor bei Quenstedt
Habitat type: spring water fen

Date of investigation: 4 August 1979
Situation: Quenstedt-1.4 kmE, 51.7057°E, 11.4706°E, 150 m, vic. Hettstedt
Plot size: S-area 58 m², Q-area 58 m², habitat size: 150 m²
Orography (slope and orientation of surface): 3° S
Soil conditions: flat fen bog over calcareous loamy ground
Comments: the fen is fed by water leaking from the foot of a limestone slope
Vegetation:
– herb layer (cover 100%):
Indet. grasses, *Equisetum palustre* 80, *Eriophorum latifolium* 20, *Cirsium oleraceum* 2, *Carex nigra* 9, *Parnassia palustris* 0.2, *Epilobium parviflorum*, *Hypericum tetrapterum*, *Galium uliginosum*
– moss and lichen layer (cover 20%)
Sphagnum
– litter layer (cover 15%)
– dead wood on ground (cover 1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 17.20°C, T_{MEAN} 13.49°C, F (moisture) 8.11, N (nutrients) 3.43, R (Ca^{++}) 6.83, M 1, PD 2500, S 0

Ant species		nests / 100 m²
Myrmica rubra	1.	105.20
total		105.20

Species richness index S_{100} 1.0 species / 100 m².

SP 82: Verlandungsmoor (Erlenbruch) im NSG Krumme Lake

Habitat type: alder carr in the margin zone of a bog
Date of investigation: 12 August 1979
Situation: 1.9 km ENE Berlin-Müggelheim (church), 52.4207°N, 13.6890°E, 40 m
Plot size: S-area 50 m²
Orography (slope and orientation of surface): 0°
Soil conditions: partially oscillating, peaty bog soil, swampy with emmision of H_2S.
Comments:
Vegetation:
– tree layer (cover 50%):
Alnus glutinosa (old wood)
– herb layer (cover 60%):
Hydrocotyle vulgaris 50, *Scutellaria galericulata*, *Myosotis palustris*, *Ranunculus scleratus*, *Juncus* spec.
– moss and lichen layer (cover 20%)
– physico-chemical factors, plant and stone density:
T_{MAX} 15.80°C, T_{MEAN} 13.57°C, F (moisture) 8.70, N (nutrients) 5.50, R (Ca^{++}) 5.30, M 1, PD 1800, S 0

Ant species		nests / 100 m²
Myrmica rubra		8.00
Myrmica ruginodis	2.	4.00
total		12.00

Species richness index S_{100} 2.31 species / 100 m².

SP 83: Hochmoor-Schwingrasen im NSG Kranichsee

Habitat type: quaking *Sphagnetum* in a montane peat bog
Date of investigation: 1 July 1979
Situation: Carlsfeld (church) 3.0 km S, 50.4069°N, 12.5900°E, 933 m
Plot size: S-area 60 m², Q-area 60 m², habitat size: 2 ha
Orography (slope and orientation of surface): 0°
Soil conditions: open, very wet and oscillating Sphagnetum over a 7-metres thick peat body
Comments: the plot extends around the big moor pool in the centre of the bog on Czech territory.
Vegetation:
– herb layer (cover 10%):
V*accinium oxycoccus*, *Empetrum nigrum*, *Ledum palustre*, *Drosera rotundifolia* (dom.), *Eriophorum* spec., *Vaccinium* spec.
– moss and lichen layer (cover 98%)
Sphagnum spec. (dom.), *Polytrichum strictum*

– physico-chemical factors, plant and stone density:
T_{MAX} 20.60°C, T_{MEAN} 10.91°C, F (moisture) 8.90, N (nutrients) 1.50, R (Ca^{++}) 1.50, M 1, PD 700, S 0

Ant species		nests / 100 m²
Myrmica scabrinodis		25.00
Myrmica ruginodis	2.	11.70
total		36.70

Species richness index S_{100} 2.22 species / 100 m².
The plot was structurally unchanged in 2010.

SP 84: Pinus mugo-Bestand im Hochmoor NSG Kranichsee

Habitat type: Pinus mugo stand in a montane peat bog
Date of investigation: 1 July 1979
Situation: Carlsfeld (church) 3.0 km S, 50.40742°N, 12.58971°E, 930 m
Plot size: S-area 20 m², Q-area 142 m², habitat size: 2 ha
Orography (slope and orientation of surface): 0°
Soil conditions: peat bog soil over 4 m peat body, the peat is superficially dry and rather treadable
Comments: more sun-exposed southern edge of the *Pinus mugo* stand immediately along the German-Czech border trench
Vegetation:
– shrub layer (cover 50%,max. 1.5 m high):
Pinus mugo
– herb layer (cover 50%):
Vaccinium oxycoccus, *Vaccinium vitis-idaea*, *Melampyrum pratense*
– moss and lichen layer (cover 30%)
– litter layer (cover 15%)
– dead wood on ground (cover 2%)
– physico-chemical factors, plant and stone density:
T_{MAX} 14.60°C, T_{MEAN} 9.64°C, F (moisture) 5.00, N (nutrients) 2.70, R (Ca^{++}) 2.00, M 2, PD 750, S 0

Ant species		nests / 100 m²
Myrmica ruginodis		20.00
Lasius platythorax		15.00
Leptothorax acervorum		15.00
Formica sanguinea	4.	0.70
Total		50.70

Species richness index S_{100} 4.06 species / 100 m².

SP 85: Sphagnum-Schwingrasen NSG Jeseritzen

Habitat type: quaking *Sphagnetum* in a peat bog
Date of investigation: 10 and 11 August 1981
Situation: Nochten-4 km N, 130 m, 51.4695°N, 14.5847°E
Plot size: S-area 34 m², Q-area 34 m², habitat size: 300 m²
Orography (slope and orientation of surface): 0°
Soil conditions: open, very wet and oscillating Sphagnetum over a thick peat body
Comments: During investigation in fully intact ecological condition. The following year already strongly dehydrated under the influence of the neighboring brown coal strip mine. The site was completely destroyed by the strip mine in about 2005.
Vegetation:
– herb layer (cover 10%):
Vaccinium oxycoccus 15, *Drosera rotundifolia* 2, *Molinia coerulea* 0.5, *Rhynchospora alba* 0.5, *Pinus sylvestris* and *Betula* spec. each two saplings
– moss and lichen layer (cover 100%)
Sphagnum spec., *Polytrichum* spec.
– physico-chemical factors, plant and stone density:
T_{MAX} 26.30°C, T_{MEAN} 15.98°C, F (moisture) 8.90, N (nutrients) 1.40, R (Ca^{++}) 1.70, M 1, PD 700, S 0

Ant species		nests / 100 m²
Myrmica scabrinodis	1.	108.80
total		108.80

Species richness index S_{100} 1.0 species / 100 m².

SP 86: Sumpfporst-Kiefernwald NSG Jeseritzen

Habitat type: marsh tea stand in peat bog
Date of investigation: 11. and 12 August 1981
Situation: Nochten-4 km N, 51.4696°N, 14.5847°E, 130 m, vic. Weisswasser
Plot size: S-area 34.5 m², Q-area 34.5 m²
Orography (slope and orientation of surface): 0°
Soil conditions: Sphagnum stand on peat bog soil, only slightly oscillating due to stabilization by pine roots.
Comments: limit of existence of *Pinus sylvestris* which was weakly growing and quickly dying (only 3 living against 22 dead trees of 3-10 cm trunk diameter on an area of 50 m²). The site was completely destroyed by the strip mine in about 2005.
Vegetation:
– shrub / tree layer (cover 10%):
Pinus sylvestris
– herb layer (cover 30%):
Ledum palustre 30, *Vaccinium oxycoccus* 5, *Pinus sylvestris* and *Betula pubescens* few saplings.
– moss and lichen layer (cover 100%)
Polytrichum spec. 75, *Sphagnum* spec. 25
– dead wood on ground (cover 0.5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 23.30°C, T_{MEAN} 15.27°C, F (moisture) 8.70, N (nutrients) 2.00, R (Ca^{++}) 2.50, M 1, PD 1100, S 0

Ant species		nests / 100 m²
Myrmica scabrinodis		23.20
Myrmica rubra		23.20
Leptothorax acervorum		20.30
Lasius platythorax	4.	5.80
total		72.50

Species richness index S_{100} 5.07 species / 100 m².

SP 87: Sphagnum-Schwingrasen Dubringer Moor

Habitat type: quaking *Sphagnetum* in a peat bog
Date of investigation: 9 – 12 August 1982
Situation: Dubring-2.6 kmW, 51.3979°N, 14.1640°E 130 m, vic. Hoyerswerda
Plot size: S-area 36.1 m², Q-area 143 m²
Orography (slope and orientation of surface): 0°
Soil conditions: open Sphagnetum over a 3-metres thick peat body
Comments: regeneration area of an old peat-cutting site, water table during the time of investigation 35 cm below normal – *Sphagnum* pads therefore running aground. See also SP 132.
Vegetation:
– herb layer (cover 5%):
Rhynchspora alba 20, *Calluna vulgaris* 10, *Erica tetralix* 10, *Drosera rotundifolia* 5, *Drosera intermedia* 2, *Vaccinium oxycoccus* 2, *Molinia coerulea* 1, *Eriophorum angustifolium* 1.
– moss and lichen layer (cover 100%)
Sphagnum spec. (a species forming comparably solid pads)
– physico-chemical factors, plant and stone density:
T_{MAX} 26.20°C, T_{MEAN} 15.83°C, F (moisture) 8.90, N (nutrients) 1.50, R (Ca^{++}) 1.90, M 1, PD 700, S 0

Ant species		nests / 100 m²
Myrmica scabrinodis		30.50
Formica picea		6.20
Lasius platythorax		0.70
Myrmica rubra	4.	0.70
total		38.10

Species richness index S_{100} : 3.75 species / 100 m².

SP 88: Sphagnum-reiche Moorheide im Dubringer Moor

Habitat type: wet *Erica* heath in peat bog
Date of investigation: 9 - 12 August 1982
Situation: Dubring-2.6 km W, 51.3979°N, 14.1640°E, 130 m, vic. Hoyerswerda
Plot size: S-area 35 m², Q-area 35 m²
Orography (slope and orientation of surface): 0°
Soil conditions: peat bog soil over 3-m thick peat body
Comments: The level of the plot is about 20 cm higher than in SP 87. Heath was spreading due to a lowered water table over several years. Regeneration area of an old peat-cutting site.
Vegetation:
– shrub / tree layer (cover 15%):
Betula spec., *Pinus sylvestris*
– herb layer (cover 65%):
Erica tetralix 35, *Calluna vulgaris* 25, *Eriophorum angustifolium* 4, *Molinia coerulea* 6, *Drosera rotundifolia* 0.1
– moss and lichen layer (cover 80%)
Sphagnum spec. (a species forming comparably solid pads)
– litter layer (cover 5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 22.00°C, T_{MEAN} 14.86°C, F (moisture) 8.40, N (nutrients) 1.60, R (Ca^{++}) 1.50, M 1, PD 1500, S 0

Ant species		nests / 100 m²
Formica picea		21.40
Myrmica scabrinodis		11.40
Myrmica rubra		8.60
Lasius flavus		8.60
Lasius platythorax	5.	4.30
total		54.30

Species richness index S_{100} 6.29 species / 100 m².
The development into a heat with encroachment of *Betula* and *Pinus* continued until 2005 due to low average water table.

SP 89: Pinus-Molinia-Erica-Bestand im Dubringer Moor

Habitat type: Molinio-Pinetum in peat bog
Date of investigation: 9 –12 August 1982
Situation: Dubring-2.6 kmW, 51.3981°N, 14.1658°E 130 m, vic. Hoyerswerda
Plot size: Q-area 100 m²
Orography (slope and orientation of surface): 0°
Soil conditions: peat bog soil over a 3-m thick peat body.
Comments: the level of the plot is higher than in SP 88. *Sphagnum* existed in wet depressions only. Regeneration area of an old peat-cutting site.
Vegetation:
– tree layer (cover 15%, up to 5 m high, mean trunk distance 6 m):
Pinus sylvestris
– shrub layer (cover 20%):
largely *Betula* spec., fewer *Pinus sylvestris*
– herb layer (cover 95%):
Molinia coerulea 50, *Erica tetralix* 30, *Calluna vulgaris* 15, *Ledum palustre* 0.1
– moss and lichen layer (cover 15%)
Sphagnum spec. (in wet depressions)
– litter layer (cover 3%)
– dead wood on ground (cover 0.5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 17.10°C, T_{MEAN} 13.73°C, F (moisture) 7.40, N (nutrients) 1.60, R (Ca^{++}) 1.30, M 1, PD 2500, S 0

Ant species		nests / 100 m²
Lasius platythorax		6.00
Formica picea		2.00
Myrmica scabrinodis		1.30
Myrmica ruginodis	4.	1.00
total		10.30

Species richness index S_{100} : 4.00 species / 100 m².

The closed and high herb layer caused a pessimal microclimate. Ant nests only at pine strunks or patches with *Sphagnum*.

SP 90: Wanderdüne Nachterstedt

Habitat type: wandering dune
Date of investigation: 7 July 1979
Situation: Nachterstedt-1.6 NNW, 51.8130°N, 11.3326°E, 90 m
Plot size: S-area 67 m², Q-area 67 m², habitat size: >1 ha
Orography (slope and orientation of surface): 0°
Soil conditions: moving aeolic fine sand
Comments: The plot was situated on a terrace near the northern margin of a huge brown-coal strip mine where the terrain sloped south forming a sequence of terraces. The position in the relief causes an above-average wind velocity. SP 91 and SP 92 were adjacent. The site was flooded by a residual lake in about 2005.
Vegetation:
– herb layer (cover 3%):
Cirsium arvense, *Oenothera biennis*, *Senecio vernalis*, *Epilobium angustifolium*, *Cynoglossum officinale*, *Populus nigra*, *Poa annua*, *Poa pratensis*, *Bromus tectorum* (only single plants).
– physico-chemical factors, plant and stone density:
T_{MAX} 32.20°C, T_{MEAN} 16.95°C, F (moisture) 2.90, N (nutrients) 2.50, R (Ca^{++}) 5.20, M 2, PD 100, S 0

Ant species		nests / 100 m²
Formica cinerea	1.	4.50
total		4.50

Species richness index S_{100} 1.0 species / 100 m².
Formica cinerea nest entrances only at bases of plant stems where the sand is less dynamic.

SP 91: Feinsanddüne Nachterstedt

Habitat type: aeolic sand dune
Date of investigation: 7 July 1979
Situation: Nachterstedt-1.6 NNW, 51.8130°N, 11.3326°E, 92 m
Plot size: S-area 35 m², Q-area 35 m², habitat size: >1 ha
Orography (slope and orientation of surface): 0°
Soil conditions: aeolic fine sand, weakly shifting
Comments: The plot was situated on a terrace near the northern margin of a huge brown-coal strip mine where the terrain sloped south forming a sequence of terraces. The position in the relief causes an above-average wind velocity. SP 91 and SP 92 were adjacent. The site was flooded by a residual lake in about 2005.
Vegetation:
– herb layer (cover 8%):
Cirsium arvense, *Oenothera biennis*, *Senecio vernalis*, *Epilobium angustifolium*, *Cynoglossum officinale*
– physico-chemical factors, plant and stone density:
T_{MAX} 32.20°C, T_{MEAN} 16.95°C, F (moisture) 2.90, N (nutrients) 2.50, R (Ca^{++}) 5.30, M 2, PD 300, S 0

Ant species		nests / 100 m²
Formica cinerea	1.	17.20
total		17.20

Species richness index S_{100} 1.00 species / 100 m².

SP 92: Lehmige Feinsandfläche Nachterstedt

Habitat type: loamy sand area
Date of investigation: 7 July 1979
Situation: Nachterstedt-1.6 NNW, 51.8130°N, 11.3326°E, 95 m
Plot size: S-area 106 m², Q-area 400 m², habitat size: 4000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: aeolic fine sand with few stones, rather treadable, stabilised by the root web of herbs and by a loamy component.

Comments: The plot was situated on a terrace near the northern margin of a huge brown-coal strip mine where the terrain sloped south forming a sequence of terraces. The position in the relief causes an above-average wind velocity. SP 92 and SP 93 were adjacent. The site was flooded by a residual lake in about 2005.
Vegetation:
– herb layer (cover 8%):
Anthemis tinctoria, *Cirsium arvense*, *Conyza canadensis*, *Oenothera biennis*, *Taraxacum officinale*, *Senecio vernalis*, *Poa pratensis*
– physico-chemical factors, plant and stone density:
T_{MAX} 32.20°C, T_{MEAN} 16.95°C, F (moisture) 3.60, N (nutrients) 2.50, R (Ca^{++}) 5.00, M 2, PD 200, S 1

Ant species		nests / 100 m²
Formica cinerea		38.70
Lasius niger		2.80
Formica rufibarbis	3.	0.25
total		41.75

Species richness index S_{100} 2.17 species / 100 m².

SP 93: Sand-Geröllfläche Nachterstedt

Habitat type: boulders of mixed material at the foot of a break-off edge
Date of investigation: 15 July 1980
Situation: Nachterstedt-1.8 NNW, 51.8154°N, 11.3299°E, 105 m
Plot size: S-area 65 m², Q-area 65 m², habitat size: 4000 m²
Orography (slope and orientation of surface): 8° SE
Soil conditions: loamy sand, mixed with much riverine rubble and coarse pleistocenic boulders up to 40 cm diameter.
Comments: The plot was situated at the foot of a 15-m high, 50-60° steep break-off edge forming the northern margin of the strip mine which explains the heterogenous soil material.
Vegetation:
– herb layer (cover 15%):
Calamagrostis epigejos (dom.), *Inula conyza* (subdom.), *Epilobium angustifolium*, *Anthemis tinctoria*, *Cirsium arvense*, *Conyza canadensis*, *Arenaria serpyllifolium*, *Cirsium vulgare*
– physico-chemical factors, plant and stone density:
T_{MAX} 29.60°C, T_{MEAN} 16.32°C, F (moisture) 3.80, N (nutrients) 5.10, R (Ca^{++}) 5.20, M 2, PD 800, S 15

Ant species		nests / 100 m²
Tetramorium caespitum		47.70
Formica cinerea		43.10
Lasius niger		16.90
Formica rufibarbis		1.50
Ponera coarctata	5.	1.50
total		110.70

Species richness index S_{100} 5.46 species / 100 m².

SP 94: Fussweg in Berlin-Röntgental

Habitat type: urban walkway
Date of investigation: 15 August 1979
Situation: Zepernick-Röntgental, Kastanienallee, 52.65150°N, 13.51247°E, 60 m
Plot size: S-area 46 m², Q-area 46 m²,
Orography (slope and orientation of surface): 0°
Soil conditions: walkway on sand
Comments: There was the sequence of paved road – kerb – lawn stripe of 1.3 m width – paved walkway of 1.3 m width – bare sand of 1.5 m width cleared of herbs – garden fence. Ant nests were recorded under the paved walkway and in the sand band.
Vegetation:
– tree layer (cover 30%):
Aesculus hippocastanum (street trees)
– herb layer (cover 0.5%):
single *Poa annua* plants between the pavement stones
– physico-chemical factors, plant and stone density:

T_{MAX} 27.70°C, T_{MEAN} 16.18°C, F (moisture) 3.86, N (nutrients) 4.00, R (Ca^{++}) 5.33, M 5, PD 300, S 40
Due to absence of indicator plants on the plot, plants from the margin of a sandy lane nearby were taken as substitute data: *Agropyron repens*, *Cichorium intybus*, *Convolvulus arvensis*, *Echium vulgare*, *Hypericum perforatum*, *Rumex acetosella*, *Sedum acre*

Ant species	nests / 100 m²
Myrmica rugulosa	30.40
Lasius niger	17.40
Tetramorium caespitum	4.40
Myrmica rubra	2.20
Formica fusca 5.	2.20
total	56.60

Species richness index S_{100} 5.89 species / 100 m².

SP 95: Bordsteinkante einer Pflasterstrasse in Gatersleben

Habitat type: paved road / kerb / regularly mowed lawn
Date of investigation: 20 May 1979
Situation: Gatersleben, 51.82671°N, 11.27853°E, 110 m
Plot size: S-area 86 m² (173 m length x 0.5 m width)
Orography (slope and orientation of surface): 0°
Soil conditions: granite pavement over gravel plus tschernosem (under the lawn)
Comments: Investigated was only a 0.5 m wide stripe consisting of margin of road pavement, kerb and turf margin. The low-traffic road was situated in the area the Central Institute of Genetics and Crop Research and was sun-exposed nearly throughout the day.
Vegetation:
– herb layer (cover 50%):
Poa annua, few *Sedum acre*
– physico-chemical factors, plant and stone density:
T_{MAX} 27.0 0°C, T_{MEAN} 15.75°C, F (moisture) 4.00, N (nutrients) 5.00, R (Ca^{++}) 5.50, M 4, PD 500, S 20
F, N and R data are only a guess relative to SP 40.

Ant species	nests / 100 m²
Lasius niger	95.00
Lasius flavus	23.30
Myrmica rugulosa	19.80
Myrmica rubra	3.50
Lasius emarginatus 5.	1.20
total	142.80

Species richness index S_{100} 5.15 species / 100 m².

SP 96: Randstreifen Fernverkehrsstrasse bei Görlitz

Habitat type: margin of a high-traffic highway
Date of investigation: 8 August 1983
Situation: Highway F 115 north of Görlitz, 51.17858°N, 14.96385°E, 230 m
Plot size: S-area 60 m², Q-area 100 m² (60 m length x 1 m width)
Orography (slope and orientation of surface): 2° S
Soil conditions: concrete plates slightly inclined towards street margin on a road bed elevated 1 m above environment; road margin with 30 cm of bare, coarse sand, then increasingly covered by vegetation. Extremely variable moisture in the margin stripe: during rainfall strong influx of water over the concrete pavement but water quickly percolating and surface quickly drying.
Comments: margin of a high-traffic road with increased lead and salt concentration.
Vegetation:
– herb layer (cover 50%):
Lolium perenne (dominant), *Matricaria chamomilla*, *Matricaria discoidea*, *Tripleurospermum inodorum*, *Galinsoga parviflora*, *Linaria vulgaris*, *Artemisia vulgaris*, *Tussilago farfara*, *Trifolium pratense*, *Setaria viridis*, *Polygonum aviculare*, *Polygonum lapathifolium*, *Rumex acetosella*, *Taraxacum officinale*, *Poa compressa*
– physico-chemical factors, plant and stone density:
T_{MAX} 27.90°C, T_{MEAN} 16.11°C, F (moisture) 4.60, N (nutrients) 5.90, R (Ca^{++}) 6.29, M 6, PD 500, S 0
T_{MAX} 35°C in sandy road margin, decreasing to 24°C in tall herbs 1.2 meter away from the pavement

Ant species		nests / 100 m²
Lasius niger		50.00
Myrmica rugulosa		18.30
Myrmica rubra		10.00
Lasius flavus		3.30
Formica rufibarbis	5.	1.00
total		82.60

Species richness index S_{100} : 4.44 species / 100 m².
In about 2005 transformed into a dead-end road with almost no traffic.

SP 97: Hangmoor an der Lochmühle bei Bad Brambach

Habitat type: slope bog
Date of investigation: 20 June 1986, 23 August 1987
Situation: Bad Brambach (railway station)-2.7 km SW, 50.2006°N, 12.2844°E, 665 m
Plot size: S-area 74.5 m², Q-area 74.5 m², habitat size: 4000 m² (whole bog 13000 m²)
Orography (slope and orientation of surface): 5° E
Soil conditions: bog with a 20 cm thick peat body fed by water leaking from a slope.
Comments: beginning eutrophication but there was still a rather good condition.
Vegetation:
– herb layer (cover 18%):
Eriophorum vaginatum 5, *Comarum palustre*, *Potentilla erecta*, grasses together 15%, *Carex rostrata*, *Avenella flexuosa*, *Carex nigra*, *Holcus mollis*, *Viola palustris*
– moss and lichen layer (85%)
Sphagnum 55, *Polytrichum* 30
– physico-chemical factors, plant and stone density:
T_{MAX} 21.20°C, T_{MEAN} 12.46°C, F (moisture) 8.43, N (nutrients) 2.62, R (Ca^{++}) 2.42, M 1, PD 1200, S 0

Ant species		nests / 100 m²
Myrmica scabrinodis		25.50
Formica lemani		10.70
Myrmica rubra		9.40
Myrmica ruginodis		5.40
Myrmica vandeli		2.70
Leptothorax acervorum	6.	1.30
total		55.00

Species richness index S_{100} 6.38 species / 100 m².

SP 98: Neissetal, Erlenaue am Saupantsche-Graben

Habitat type: alluvial alder stand in a gorge
Date of investigation: 21 April and 29 April 1988
Situation: Kloster Mariental 3.4 km SSW, 50.9705°N, 14.9024°E, 216 m
Plot size: S-area 40 m², Q-area 250 m², habitat size: 1000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: mixture of weathered particles of bedrock, alluvial gravel and loess-loam
Comments: Very shaded because of situated at the bottom of a river valley and surrounded by steep forested slopes.
Vegetation:
– tree layer (cover 80%, mean height 20 m):
Alnus glutinosa
– herb layer (cover 90%):
Athyrium filix-femina, *Lysimachia vulgaris*, *Oxalis acetosella*, *Senecio fuchsi*, *Rubus idaeus*, *Carex brizoides*, *Equisetum sylvaticum*, *Lamium galeobdolon, Eupatorium cannabinum*. Old recordings of SMN Görlitz before 1975: *Carex remota*, *Circaea intermedia*, *Adoxa moschatellina*, *Festuca altissima*, *Glyceria notata*, *Hepatica nobilis*, *Lunaria rediviva*, *Paris quadrifolia*, *Milium effusum*, *Petasites hybridus*, *Petasites albus*, *Ranunculus lanuginosus*
– moss and lichen layer (1%)
– litter layer (cover 25%)
– dead wood on ground (cover 1%)
– physico-chemical factors, plant and stone density:

T_{MAX} 13.40°C, T_{MEAN} 12.72°C, F (moisture) 6.19, N (nutrients) 6.39, R (Ca^{++}) 5.86, M 3, PD 700, S 0

Ant species		nests / 100 m²
Lasius brunneus		7.50
Myrmica ruginodis		1.10
Lasius platythorax		0.60
Myrmica rubra	4.	0.40
total		9.60

Species richness index S_{100} nach Seifert 2.31 species / 100 m².

SP 99: Schluchtwald südlich von Saupantsche-Graben

Habitat type: sycamore-hornbeam-elm ravine forest
Date of investigation: 29 April 1988
Situation: Kloster Mariental 3.4 km SSW, 50.9702°N, 14.9022°E, 224 m
Plot size: S-area 20 m², Q-area 162 m², habitat size: 5000 m²
Orography (slope and orientation of surface): 15° N
Soil conditions: podzolic brown earth with a high content of loess-loam and a strong Ah horizon.
Comments:
Vegetation (survey by Reinhardt):
– tree layer (cover 80%,mean height 25 m):
Acer pseudoplatanus 2, *Carpinus betulus* 2, *Ulmus glabra* 2
– shrub layer (cover 5%,mean height 3 m):
Picea abies 1, *Carpinus betulus* 2, *Fagus sylvatica* r, *Acer platanoides* +, *Ulmus glabra* 1, *Sambucus racemosa* +, *Quercus robur* +, *Sorbus aucuparia* +
– herb layer (cover 40%):
Mercurialis perennis, *Milium effusum*, *Festuca gigantea*, *Festuca altissima*, *Lamium galeobdolon*, *Aegopodion podagraria*, *Impatiens parviflora*, *Impatiens noli-tangere*, *Urtica dioica*, *Rubus pedemontanus*, *Anemone nemorosa*, *Stachys sylvatica*, *Athyrium filix-femina*, *Ranunculus lanuginosus*, *Actaea spicata*, *Lunaria rediviva*, *Galium odoratum*, *Sorbus aucuparia*, *Oxalis acetosella*, *Viola reichenbachiana*, *Maianthemum bifolium*, *Melica nutans*, *Melica uniflora*, *Eupatorium cannabina*, *Quercus robur*, *Scrophularia nodosa*, *Pulmonaria officinalis*, *Tilia cordata*, *Polygonatum multiflorum*, *Lathyrus vernus*, *Primula elatior*, *Ribes uva-crispa*, *Holcus lanatus*, *Solidago gigantea*, *Frangula alnus*
– moss and lichen layer (10%, 5 cm)
– litter layer (cover 70%)
– dead wood on ground (cover 10%)
– physico-chemical factors, plant and stone density:
T_{MAX} 15.00°C, T_{MEAN} 13.03°C, F (moisture) 5.70, N (nutrients) 6.04, R (Ca^{++}) 5.82, M 1, PD 500, S 0

Ant species		nests / 100 m²
Lasius brunneus		2.47
Myrmica ruginodis	2.	0.62
total		3.09

Species richness index S_{100} : 1.64 species / 100 m².

SP 100: Milkeler Moor

Habitat type: open peat bog
Date of investigation: 9 and 10 August 1988
Situation: Rauden-1.95 km WSW, 51.3334°N, 14.4603°E, 137 m, eastern corner of the smaller, eastern bog
Plot size: S-area 61 m², Q-area 61 m², habitat size: 2000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: regeneration of a peat-cutting area of a transition moor, peat body only 5-10 cm thick.
Comments:
Vegetation:
– shrub layer (cover 4%,mean height 30-40 cm, max. 2 m):
Pinus silvestris 4, *Betula pendula* 0.1, *Populus tremula* 0.1
– herb layer (cover 55%):

Erica tetralix 48, *Eriophorum angustifolium* 2, *Molinia caerulaea* 2, *Juncus acutiflorus* 1, *Phragmites australis* 0,5, *Drosera rotundifolia* 0.1, *Drosera intermedia* 0.1, *Rhynchospora alba* 0.1, *Calluna vulgaris* 0.1
– moss and lichen layer (95%, only absent from from spots with very dense *Erica*)
Sphagnum recurvum, *Sphagnum subsecundum*
– litter layer (cover 5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 24.60°C, T_{MEAN} 15.56°C, F (moisture) 7.64, N (nutrients) 3.23, R (Ca^{++}) 3.67, M 1, PD 1200, S 0

Ant species		nests / 100 m²
Myrmica scabrinodis		45.90
Lasius platythorax		4.90
Formica picea		3.30
Myrmica rubra		3.30
Leptothorax acervorum	5.	1.60
total		59.00

Species richness index S_{100} 5.54 species / 100 m².

SP 101: Sphagnum-Schwingrasen Spisk
Habitat type: quaking *Sphagnetum* in a peat bog
Date of investigation: 13 April**,** 24 May and 6 August 1989
Situation: Kreba-Neudorf-2.5 km NE, 51.3609°N, 14.7130°E, 144 m, SE-Sektor des Spisk
Plot size: S-area 100 m², Q-area 100 m², habitat size: 400 m²
Orography (slope and orientation of surface): 0°
Soil conditions: oscillating peat directly at the water
Comments: Polytrichum only in two pads of 0.3 m² each
Vegetation:
– shrub layer (cover of living plants 0.5%, 1 living and 19 dead, 1.5-3 m tall pines):
Pinus silvestris
– herb layer (cover 22%):
Erica tetralix 10, *Eriophorum angustifolium* 10, *Phragmites* 0.8, *Pinus silvestris* 0.5, *Betula pendula* 0.1, *Viola palustris* +, *Drosera rotundifolia*, *Drosera intermedia*, *Potentilla erecta*, *Utricularia minor*
– moss and lichen layer (90%)
Sphagnum 90, *Polytrichum commune* 0.6
– physico-chemical factors, plant and stone density:
T_{MAX} 26.20°C, T_{MEAN} 16.02°C, F (moisture) 9.14, N (nutrients) 3.00, R (Ca^{++}) 3.64, M 1, PD 800, S 0

Ant species		nests / 100 m²
Lasius platythorax		3.00
Myrmica scabrinodis		1.00
Myrmica rubra	3.	1.00
total		5.00

Species richness index S_{100} : 3.00 species / 100 m².
The low *Myrmica* density ist probably explained by the purity of the *Sphagnum* turf (no mixed pads with *Polytrichum*!) and its very low height above the water table. There was only little change of habitat in 2008.

SP 102: Naturwaldregeneration Teufelsnase Neissetal
Habitat type: initial forest of natural broad-leafed woodland
Date of investigation: 19 June 1989 and 21 June 1989
Situation: Kloster Mariental 3.9 km SSW, SP102a: 50.9677°N, 14.9033°E, SP 102b: 50.9659°N, 14.9025°E, 220-225 m. Two separate subareas 200 m NE (SP 102a) and 50 m ESE (SP 102b) of the rock Teufelsnase.
Plot size: S-area 15 m², Q-area 114 m², habitat size: 5000 m²
Orography (slope and orientation of surface): 25° E (SP 102a), 12° E (SP 102b)
Soil conditions: podzolic brown earth with high content of loess-loam, Ah horizon at least 35 cm thick with high content of fly ash of two brown-coal driven power stations.
Comments: in 1959, the plot was an old living *Picea abies* forest that died therafter due to smoke immision from the nearby Polish and German power plants. The dead spruce were largely cleared but

there remained a strong amount of spruce wood and spruce stumps which were in 1989 in a favorable state of decomposition. This explains the rather high ant density.
Vegetation:
– tree layer (cover 15%, mean height 20 m):
Picea abies (few surviving trees), *Acer pseudoplatanus*, *Quercus* spec.
– shrub layer (cover 88%, mean height 3 m, max. 5 m):
Acer pseudoplatanus, *Carpinus betulus*, *Tilia cordata*, *Fraxinus excelsior*, *Quercus robur*, *Betula pendula*, *Acer platanoides*
– herb layer (cover 28%):
Athyrium filix-femina, *Carpinus betulus*, *Oxalis acetosella*, *Quercus robur*, *Sencio fuchsii*, *Senecio nemorensis*, *Fraxinus excelsior*, *Vaccinium myrtillus*, *Fragaria vesca*, *Milium effusum*, *Silene dioica*, *Deschampsia flexuosa*, *Maianthemum bifolium*, *Betula pendula*, *Acer pseudoplatanus*, *Rosa canina*, *Humulus lupulus*, *Rubus idaeus*, *Prenanthes purpurea*, *Daphne mezereum*, *Acer platanoides*
– moss and lichen layer (10%, 5 cm)
– litter layer (cover 10%)
– dead wood on ground (cover 10%)
– physico-chemical factors, plant and stone density:
T_{MAX} 15.60°C, T_{MEAN} 13.29°C, F (moisture) 5.62, N (nutrients) 5.93, R (Ca^{++}) 4.78, M 1, PD 1000, S 0

Ant species		nests / 100 m²
Myrmica ruginodis		11.40
Myrmica rubra		6.10
Lasius platythorax	3.	0.90
total		18.40

Species richness index S_{100} 3.06 species / 100 m².

SP 103: Nasse Erica-Moorheide am Spisk
Habitat type: wet heath on peat bog
Date of investigation: 24 May and 6 August 1989
Situation: Kreba-Neudorf-2.5 km NE, 51.3609°N,14.7130°E, 144 m, SE sector of the Spisk
Plot size: S-area 100 m², Q-area 100 m², habitat size: xxxx m²
Orography (slope and orientation of surface): 0°
Soil conditions: fen peat
Comments: directly adjacent to SP 101.
Vegetation:
– shrub layer (cover 10%, height 0.5-2 m):
Pinus silvestris
– herb layer (cover 80%):
Erica tetralix 80, *Pinus silvestris*, *Betula pendula*, *Molinia caerulaea*, *Potentilla erecta*, *Eriophorum angustifolium*, *Drosera rotundifolia*, *Carex nigra*
– moss and lichen layer (20%)
Sphagnum
– litter layer (cover 5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 17.60°C, T_{MEAN} 14.00°C, F (moisture) 8.33, N (nutrients) 1.83, R (Ca^{++}) 2.25, M 1, PD 1500, S 0

Ant species		nests / 100 m²
Lasius platythorax		4.00
Myrmica rubra		2.00
Myrmica scabrinodis	3.	1.00
total		7.00

Species richness index S_{100} 3.00 species / 100 m².

SP 104: Durchfluss-Hochmoor bei Bernsdorf
Habitat type: quaking *Sphagnetum* in a peat bog
Date of investigation: 8 August 1989
Situation: nördlich Kamenz, Bernsdorf-4.7 NE, 51.39795°N, 14.11445°E, 145 m
Plot size: S-area 60 m², Q-area 60 m²
Orography (slope and orientation of surface): 1° NE
Soil conditions: quaking Sphagnetum in a peat bog

Comments: percolation bog with drainage towards the north west. Despite excessive drought in the environment keeping a high water table. The plot refers to 60 m² inhabitable area interrupted by 40 m² water-filled hollows.
Vegetation:
– shrub layer (cover 1%, up to 3 m tall):
Pinus sylvestris
– herb layer (cover 20%):
Molinia coerulea 5, *Erica tetralix* 3, *Eriophorum angustifolium* 3, *Sarracenia purpurea* 3, *Rhynchospora alba* 1, *Drosera rotundifolia* 5, *Vaccinium oxococcus* +, *Betula pendula* +, *Pinus sylvestris* +, *Typha angustifolia* +
– moss and lichen layer (cover 99%)
Sphagnum
– physico-chemical factors, plant and stone density:
T_{MAX} 24.60°C, T_{MEAN} 15.53°C, F (moisture) 8.88, N (nutrients) 2.38, R (Ca^{++}) 2.50, M 1, PD 800, S 0

Ant species	nests / 100 m²
Myrmica scabrinodis	41.70
Lasius platythorax	3.30
Myrmica rubra 3.	1.70
total	46.70

Species richness index S_{100} 3.33 species / 100 m².

SP 105: Naturnaher Wald in Rutschung P

Habitat type: landslid sycamore-linden-hornbeam wood
Date of investigation and investigatore: 31 July 1997
Situation: 8 km SSE Görlitz, 51.0903°N, 14.9279°E, 189-194 m
Plot size: S-area 30 m² (6 subareas of 5 m²), Q-area 500 m², habitat size 7000 m²
Orography (slope and orientation of surface): overall slope 10° E, faults and irregular inclination of the big clods during the landslide caused a heterogenous, distorted relief
Soil conditions: authochtonous loess-loam, yellowbrown silt, free of calcium, up to 1-m deep cleft ruptures, faults and inclinations of big clods of 4-10 m diameter (kept together by the root plates of the trees).
Comments: The wood was transferred by landslide to 340 m SE from its original position in 1981 and was in a stable position in 1997. 10% of the area have been inundated by Lake Berzdorf in 2009.
Vegetation: (survey by Bräutigam and Gebauer, not fully given here but completely considered for calculation of indicator values)
– tree layer (cover 90%, mainly old trees):
Acer pseudoplatanus 4, *Tilia cordata* 4, *Carpinus betulus* 3, *Quercus robur* 1, younger *Fraxinus excelsior* 1, younger *Prunus padus* +, *Salix rubens* +, *Tilia platyphyllos* +
– shrub layer (cover 20%):
Corylus avellana 2, *Fraxinus excelsior* 1, *Crataegus* spec., *Prunus padus*, *Quercus robur*, *Evonymus europaea*, *Sambucus nigra*, *Rubus idaeus* all +
– herb layer (cover 70%):
Poa nemoralis 5, *Carex brizoides* 2, *Anemone nemorosa* 1, *Convallaria majalis* 1, *Majanthemum bifolium* 1, *Melampyrum nemorosum* 1, *Polygonatum multiflorum*, *Galium schultesii*, *Moeringia trinerva*, *Scrophularia nodosa*, *Solidago virgaurea*, *Stellaria holostea*, *Asarum europeum*, *Corydalis cava*, *Dactylis glomerata*, *Dryopteris filix-mas*, *Epilobium montanum*, *Festuca gigantea*, *Lamium galeobdolon*, *Milium effusum*, *Holcus mollis*, *Holcus lanatus*, *Senecio ovatus*, *Taraxacum officinale*, *Viola reichenbachiana*, *Aegopodion podagraria*, *Anthriscus sylvestris*, *Gnaphalium sylvaticum*, *Hieracium sabaudum*, *Luzula pilosa*, *Pulmonaria obscura*, *Achillea millefolium*
– moss and lichen layer (cover 15%):
Atrichum undulatum 2, *Dicranella heteromalla* 2, *Politrichum formosum* +
– litter layer (cover 40%)
– dead wood on ground (cover 8%)
– physico-chemical factors, plant and stone density:
T_{MAX} 15.52°C, T_{MEAN} 13.78°C, F (moisture) 5.33, N (nutrients) 5.54, R (Ca^{++}) 5.71, M 2, PD 800, S 0.05

Ant species	nests / 100 m²
Lasius platythorax	36.70
Myrmica ruginodis	26.70
Leptothorax acervorum	16.70

Myrmica rubra		16.70
Formica fusca		13.30
Temnothorax crassispinus		10.00
Lasius brunneus		6.70
Lasius niger		3.30
Myrmica scabrinodis		3.30
Lasius fuliginosus		0.20
Lasius umbratus	11.	0.20
total		133.80

Species richness index S_{100} 11.76 species / 100 m².
The ant assemblage is basically the same as it is expected for an undisturbed forest of the same structure and tree composition – i.e. the huge ruptures and deformations during the landslide did not have a significant influence. The typical, and apparently stable, faunal composition of this small woodland patch was also not influenced by the dynamic development in the adjacent areas of SP 107 and SP 108.

SP 106: Erosionsfläche auf Basalttuff

Habitat type: Erosion area on volcanic (basaltic) tuff
Date of investigation: 1 and 2 August 1997
Situation: 8 km SSE Görlitz, 51.0922°N, 14.9262°E, 220-225 m
Plot size: S-area 72 m², Q-area 254 m²
Orography (slope and orientation of surface): 35° SE
Soil conditions: Loamy to claylike weathered material of basaltic tuff, mixed with 5- to 50-cm thick edge-rounded to rounded blocks of basaltic tuff. About 20% of surface is covered with unweathered basaltic tuff containing 10% to 20% xenocrysts (nepheline, olivine).
Comments: very steep area on basaltic tuff. The geological raw material was exposed by a landslide in 1981. There is strong splash erosion and no soil formation.
Vegetation:
– herb layer (cover 15%):
Artemisia vulgaris 1, *Dactylis glomerata* 1, *Erigeron acris* 1, *Festuca ovina* 1, *Festuca rubra* 1, *Linaria vulgaris* 1, *Medicago lupulina* 1, *Achillea millefolium* +, *Daucus carota* +, *Festuca brevipila* +, *Salix caprea* +, *Tanacetum vulgare* +, *Taraxacum officinale* +, *Agrostis capillaris* r, *Lactuca serriola* r, *Plantago lanceolata* r, *Trifolium pratense* r, *Tussilago farfara* r, *Lotus corniculatus*, *Conyza canadensis*
– moss and lichen layer (cover 15%):
Cladonia fimbriata r, *Cladonia* cf. *subulata*, *Ceratodon purpureus*
– physico-chemical factors, plant and stone density:
T_{MAX} 29.23°C, T_{MEAN} 17.09°C, F (moisture) 4.13, N (nutrients) 5.06, R (Ca^{++}) 5.43, M 2, PD 500, S 5

Ant species		nests / 100 m²
Lasius niger		34.70
Tetramorium impurum		1.40
Formica cinerea	3.	0.40
total		36.50

Species richness index S_{100} 2.34 species / 100 m².

SP 107: Stark ruderalisierte Möhren-Glatthaferwiese.

Habitat type: carrot-oatgrass meadow with strong ruderal influence
Date of investigation: 4 August 1997
Situation: 8 km SSE Görlitz, 51.0898°N, 14.9277°E, 188 -190 m
Plot size: S-area 67 m²
Orography (slope and orientation of surface): 9° S
Soil conditions: autochthonous loess-loam, yellowbrown, dusty silt without calcium. Ground much more ruptured by the landslide than in SP 105, distance of fissures perpendicular to their length extension 50-150 cm, fissures up to 80 cm deep, 10-100 cm wide and 10-15 meters long. Bare soil is exposed at steep fault scarps of up to 80 cm height.
Comments: Immediately adjacent to SP 105. The plot was a former cut-meadow and cattle pasture before it was transferred by landslide 340 m SE of its original position in 1981 and was in a stable position in 1997. The fissures and faults cause a small-scale change of very xerothermous (crests and S-facing fronts of fault scarps) with cool and moist microhabitats (bottom of clefts and N-facing fronts of fault scarps).

Vegetation:
– herb layer (cover 90%, very heterogeneous, the mainly grassy area is interspersed with almost vegetation-free spots and tall herb patches):
Daucus carota, *Arrhenaterum elatius*, *Artemisia vulgaris*, *Dactylis glomerata*, *Erigeron acris*, *Festuca rubra*, *Achillea millefolium*, *Tanacetum vulgare*, *Agrostis capillaris*, *Trifolium pratense*, *Tussilago farfara*, *Conyza canadensis*, *Epilobium hirsutum*, *Cirsium vulgare*, *Tripleurospermum perforatum*, *Geranium palustre*, *Solidago canadensis*, *Conyza canadensis*, *Crepis capillaris*, *Vicia hirsuta*, *Vicia tetrasperma*, *Hypericum perforatum*, *Humulus luppulus*, *Hieracium sabaudum*, *Rumex thyrsiflora*, *Leucanthemum vulgare*, *Epilobium ciliatum*, *Epilobium tetragonum tetragonum*, *Crepis tectorum*, *Trifolium hybridus*, *Campanula patula*, *Alchemilla monticola*, *Urtica dioica*, *Calamagrostis epigejos*
– moss and lichen layer (cover 10%)
– litter layer (cover 1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 20.88°C, T_{MEAN} 15.09°C, F (moisture) 4.63, N (nutrients) 5.75 R (Ca^{++}) 5.94, M 2, PD 2400, S 0
T_{MAX} 32.6°C at crests and S-facing fronts of fault scarps, 22.8°C in grassland with PD 2400 and 16.9°C at the bottom of fault clefts.

Ant species	nests / 100 m²
Lasius niger	100.00
Lasius flavus	14.90
Formica cunicularia	7.50
Formica fusca	7.50
Myrmica rubra	6.00
Formica cinerea	4.50
Myrmica scabrinodis	3.00
Lasius emarginatus 8.	0.70
total	144.10

Species richness index S_{100} 7.60 species / 100 m².
There was complete scrub encroachement on the plot in 2016.

SP 108, Feuchte Hochstaudenflur mit Erlenaufwuchs

Habitat type: moist tall herb community developing into an alder carr
Date of investigation: 10 August 1997
Situation: 8 km SSE Görlitz, 51.0911°N, 14.9290°E, 177-182 m
Plot size: S-area 38 m²
Orography (slope and orientation of surface): 10 ° ENE, heterogenous relief due to ground deformation by landslide.
Soil conditions: autochthonous loess-loam, yellowbrown, dusty silt. Vertikal faults of 0.5-1 m height but former fissures have vanished because of instability of the moist to wet soil material. Rushing out slope water.
Comments: immediately NE of SP 105. The plot was a former openland of unclear management (probably arable land) and was transferred by a landslide 340 m SE of its original position in 1981. The drifted ground developed first into a moist tall herb community with few more xerothermous spots. In 1997 it was under fast succession into an alder carr. The plot was inundated by Lake Berzdorf in 2009.
Vegetation:
– tree layer (cover 85%, 4-6 m high, 10-15 years):
Alnus glutinosa 4, *Fraxinus excelsior* +, *Carpinus betulus* +, *Salix* spec., *Corylus avellana*
– herb layer (cover 15%):
Urtica dioica, *Chaerophyllum aromaticum*, *Tussilago farfara*, *Galeopsis speciosa*, *Cirsium oleraceum*, *Glechoma hederacea*, *Pulmonaria obscura*, *Dactylis glomerata*, *Dryopteris filix-mas*, *Festuca gigantea*, *Anthriscus sylvestris*, *Ajuga reptans*, *Agrostis gigantea*, *Heracleum spondylium*
– moss and lichen layer (cover 8%):
– litter layer (cover 5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 14.93°C, T_{MEAN} 13.65°C, F (moisture) 6.07, N (nutrients) 6.57, R (Ca^{++}) 6.88, M 2, PD 1500, S 0.05

Ant species	nests / 100 m²
Myrmica rubra	92.10
Lasius niger	10.50
Lasius platythorax	5.30

Myrmica ruginodis		5.30
Myrmica scabrinodis		2.60
Formica cunicularia	6.	2.60
total		118.40

Species richness index S_{100} 7.40 species / 100 m².
Lasius niger, *Myrmica scabrinodis* and *Formica cunicularia* are relics of earlier successional stages with higher sun-exposure.

SP 109: Salicornia-Kampfzone auf Salzstelle Hecklingen
Habitat type: Salicornia combat zone in a spring-fed salina
Date of investigation: 29 May 1987
Situation: 1.6 km E Hecklingen b. Stassfurt, 51.8492°N, 11.5522°E, 65 m,
Plot size: Q-area 50 m²
Orography (slope and orientation of surface): 0
Soil conditions: salty fine-grained mud, salt content 0.5-0.1%, salinity > 20 mS/cm.
Comments: the plot is a 1-metre wide and 50-metres long stripe representing the combat zone of vegetation in the transition from the bare plantless salt mud area to the closed *Puccinellia* turf.
Vegetation:
– herb layer (cover 40%):
Salicornia europaea 20, *Puccinellia distans* 20, *Aster tripolium* 1, *Juncus gerardii*, *Juncus ranarius*, *Glaux maritima*, *Halimione pedunculata*, *Suaeda maritima*
– physico-chemical factors, plant and stone density:
T_{MAX} 25.10°C, T_{MEAN} 15.49°C, F (moisture) 7.57, N (nutrients) 6.20, R (Ca^{++}) 6.00, M 2, PD 400, S 0

Ant species		nests / 100 m²
Myrmica curvithorax		20.00
Lasius niger		4.50
Lasius flavus		4.50
Myrmica specioides		3.00
Myrmica gallienii	5.	2.00
total		35.00

Species richness index S_{100} 5.78 species / 100 m².

SP 110: Salicornia-Kampfzone auf Salzstelle Sülldorf
Habitat type: Salicornia combat zone in a spring-fed salina
Date of investigation: 26 August 1987
Situation: in the village Sülldorf, 52.0284°N, 11.5650°E, 70 m,
Plot size: Q-area 50 m²
Orography (slope and orientation of surface): 0
Soil conditions: salt mud, NaCl 0.5-0.1%
Comments: the site is fed by water ascending trough salt beds of the Zechstein. Investigated was the combat zone of vegetation in the transition from the bare plantless salt mud area to areas with more dense vegation, there is some ruderal influence.
Vegetation:
– herb layer (cover 20%):
Salicornia europaea, *Puccinellia distans*, *Aster tripolium*, *Lotus tenuifolius*, *Halimione pedunculata*, *Odontites rubra*, *Suaeda maritima*
– physico-chemical factors, plant and stone density:
T_{MAX} 25.10°C, T_{MEAN} 15.49°C, F (moisture) 7.14, N (nutrients) 5.83, R (Ca^{++}) 7.40, M 2, PD 400, S 0

Ant species		nests / 100 m²
Myrmica curvithorax		25.00
Lasius niger		6.00
Myrmica rugulosa		6.00
Myrmica scabrinodis	4.	2.00
total		39.00

Species richness index S_{100} 4.63 species / 100 m².

SP 111: Sandtrockenflur auf Kippgelände bei Boxberg
Habitat type: sandy xerothermous grassland on heaped soil
Date of investigation: 14 June 1987
Situation: 6.4 km W Kraftwerk Boxberg, appr. 51.391°N, appr. 14.468°E, 120 m,
Plot size: Q-area 150 m²
Orography (slope and orientation of surface): 0 °, Plateau
Soil conditions: heaped, levelled sand without Ah horizon, extremely dry.
Comments: natural plant succession on a hilltop levelled about 15 years ago, high above ground water table, situated within a recultivation area but without amelioration at the spot.
Vegetation:
– herb layer (cover 10%):
Hieracium pilosella, Corynephorus canescens, Festuca rubra, Calamagrostis epigeijos
– moss and lichen layer (cover 70%):
Polytrichum piliferum
– bare sand: 20%
– physico-chemical factors, plant and stone density:
T_{MAX} 32.30°C, T_{MEAN} 17.50°C, F (moisture) 2.70, N (nutrients) 3.33, R (Ca^{++}) 3.00, M 2, PD 150, S 0

Ant species		nests / 100 m²
Lasius psammophilus		32.00
Manica rubida		4.67
Formica sanguinea		4.0
Lasius niger		1.33
Formica clara		1.33
Formica cinerea	6.	0.67
total		44.00

Species richness index S_{100} 5.56 species / 100 m².
Because of a strong desiccation of surface and a very deep water table there are only species present constructing galleries deep below surface. The workers of *Formica sanguinea* were unusually large.

SP 112: Sphagnum-Schwingrasen am W-Ufer des Förstersees
Habitat type: quaking Sphagnetum in a peat bog
Date of investigation: 18 August 1988
Situation: NSG Dubrow, western edge of the Förstersees, 52.2018°N, 13.70392°E, 45 m
Plot size: S-area 15 m²
Orography (slope and orientation of surface): 0 °
Soil conditions: very wet, quaking *Sphagnum* stand
Vegetation:
– herb layer (cover 15%):
Drosera intermedia, *Vaccinium oxycoccus*, *Schoenoplectus lacustris*, *Comarum palustre*
– moss and lichen layer (cover 100%):
Sphagnum spec.
– physico-chemical factors, plant and stone density:
T_{MAX} 26.40°C, T_{MEAN} 16.04°C, F (moisture) 9.75, N (nutrients) 2.50, R (Ca^{++}) 4.00, M 1, PD 700, S 0

Ant species		nests / 100 m²
Myrmica scabrinodis		20.00
Myrmica rubra		13.30
Lasius platythorax	3.	13.30
total		47.70

Species richness index S_{100} 4.76 species / 100 m².

SP 113: Trockenrasen Wandersleben
Habitat type: xerothermous grassland on keuper
Date of investigation: 3 September 1984
Situation: 0.55 km N of the castle Wanderslebener Gleiche, 50.8851°N, 10.8416°E, 295 m
Plot size: S-area 63 m², Q-area 73 m
Orography (slope and orientation of surface): 24°S
Soil conditions: very thin Ah-Horziont on 50% of the surface, the remaining 50% are bare geological outcrop (keuper)

Comments:
Vegetation:
– shrub layer (5%):
Rosa spec., *Crataegus* spec.
– herb layer (cover 50%):
Allyssum allussoides, *Brachypodium pinnatum*, *Erodium cicutarium*, *Anthericium liliago*, *Hieracium pilosella*, *Sedum acre*, *Euphorbia cyparissias*, *Salvia pratensis*, *Festuca ovina*, *Arrhenaterum elatius*, *Thymus praecox*, *Hippocrepis comosa*, *Asperula cynanchica*, *Bromus erectus*, *Arenaria serpyllifolia*, *Potentilla tabernaemontani*, *Sanguisorba minor*, *Cirsium acaule*, *Galium verum*, *Carex humilis*, *Eryngium campestre*
– moss and lichen layer (cover 100%):
Sphagnum spec.
– physico-chemical factors, plant and stone density:
T_{MAX} 29.10°C, T_{MEAN} 15.64°C, F (moisture) 2.88, N (nutrients) 3.00, R (Ca^{++}) 7.00, M 3, PD 500, S 3

Ant species	nests / 100 m²
Tapinoma erraticum	56.5
Myrmica sabuleti	19.3
Solenopsis fugax	15.9
Tetramorium caespitum	10.6
Myrmica specioides	10.0
Temnothorax interruptus	9.8
Lasius alienus	7.0
Temnothorax albipennis	6.5
Myrmecina graminicola	5.2
Ponera coarctata	3.5
Ponera testacea	3.5
Temnothorax unifasciatus	3.3
Formica rufibarbis	1.6
Myrmica schencki	0.5
Formica pratensis 15.	0.05
total	153.25

Species richness index S_{100} 12.79 species / 100 m².
During a follow-up investigation after 18 years (10 June 2002), the following ant nests were found: *erraticum* 20, *specioides* 7, *fugax* 4, *caespitum* 4, *Myrmecina* 3, *testacea* 3, *sabuleti* 2, *unifasciatus* 1, *albipennis* 1, *rufibarbis* 1. The habitat appeared rather unchanged due to extreme physicalic conditions and clearing of scrubs.

SP 114: Schafweide Wandersleben

Habitat type: mesoxerophytic grassland, sheep pasture
Date of investigation: 3 and 4 September 1984
Situation: 0.52 km NNE of the castle Wanderslebener Gleiche, 50.8849°N, 10.8419°E, 286 m
Plot size: S-area 52 m², Q-area 400 m²
Orography (slope and orientation of surface): 8°S
Soil conditions: 5-15 cm Ah horizon above keuper, with boulder of Bunter (Buntsandstein)
Comments: sheep pasture, below SP 113
Vegetation:
– shrub layer (5%):
Rosa spec., *Crataegus* spec.
– herb layer (cover 80%):
Trifolium dubium, *Euphorbia cyparissias*, *Salvia pratensis*, *Festuca ovina*, *Arrhenaterum elatius*, *Thymus praecox*, *Vicia sepium*, *Bupleurum falcatum*, *Hieracium pilosella*, *Agrimonia eupatorium*, *Lotus corniculatus*, *Ononis repens*, *Achillea millefolium*, *Dactylis glomerata*, *Trifolium repens*, *Coronilla varia*, *Bromus erectus*, *Potentilla* spec., *Sanguisorba minor*, *Cirsium acaule*, *Galium verum*, *Eryngium campestre*, *Plantago major*, *Plantago media*
– moss and lichen layer (40%)
– physico-chemical factors, plant and stone density:
T_{MAX} 26.00°C, T_{MEAN} 15.02°C, F (moisture) 3.42, N (nutrients) 3.27, R (Ca^{++}) 7.00, M 5, PD 400, S 0.5

Ant species	nests / 100 m²
Myrmica sabuleti	30.20
Lasius alienus	20.20

Lasius niger	16.00
Solenopsis fugax	15.40
Tapinoma subboreale	14.00
Temnothorax interruptus	8.80
Tetramorium impurum	8.10
Myrmica specioides	7.70
Tapinoma erraticum	5.00
Tetramorium caespitum	3.50
Myrmica schencki	2.50
Formica cunicularia	1.90
Formica fusca	1.90
Lasius flavus	1.90
Myrmecina graminicola	1.90
Formica sanguinea	0.20
Formica pratensis 17.	0.06
total	139.26

Species richness index S_{100} 14.94 species / 100 m².
During a follow-up investigation after 18 years (10 June 2002), the following ant nests were found: *niger* 5.5, *alienus* 4.5, *impurum* 3.5, *specioides* 3, *erraticum* 2.5, *caespitum* 1.5, *subboreale* 1.5, *fugax* 1, *cunicularia* 1, *sabuleti* 0.7, *schencki* 0.3, *sanguinea*, *pratensis*. The plot was transformed from a sheep pasture into a cut meadow and the height of herb layer had substantially increased.

SP 115: Hörselberg E, Schafweide

Habitat type: xerothermous grassland on limestone
Date of investigation: 4 and 5 September 1984
Situation: Sättelstädt-Kirche 0.4 km N, 50.9490°N, 10.4779°E, 330 m
Plot size: S-area 14 m²
Orography (slope and orientation of surface): 18°S
Soil conditions: rendzina over shell limestone with coarse skeletal elements
Comments: frequent sheep grazing
Vegetation:
– herb layer (cover 95%):
Euphorbia cyparissias, *Salvia pratensis*, *Sanguisorba minor*, *Cirsium acaule*, *Hiracium pilosella*, *Plantago media*, *Bupleurum falcatum*, *Carlina vulgaris*, *Carlina acaulis*, *Pimpinella saxifraga*, *Ononis spinosa*, *Gentianella ciliata*
– moss and lichen layer (5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 27.00°C, T_{MEAN} 14.82°C, F (moisture) 3.40, N (nutrients) 2.45, R (Ca^{++}) 8.00, M 5, PD 800, S 5

Ant species	nests / 100 m²
Myrmica specioides	92.80
Lasius flavus	85.70
Lasius alienus	57.10
Solenopsis fugax	17.90
Lasius jensi	7.10
Myrmecina graminicola 6.	7.10
total	267.70

Species richness index S_{100} : 9.73 species / 100 m².
A visit 18 years later (12 June 2002) showed the former sheep pasture to be transformed into a cut meadow with an increased height of the herb layer (PD 4000) and to be dominated by *Lasius niger*.

SP 116: Hörselberg E, Halbtrockenrasen

Habitat type: xerothermous grassland on limestone
Date of investigation: 5 September 1984
Situation: Sättelstädt-Kirche 0.4 km N, 50.9494°N, 10.4781°E, 347 m
Plot size: S-area 69 m², Q-area 150 m², habitat size 18000 m²
Orography (slope and orientation of surface): 25°S
Soil conditions: rendzina above shell limestone with 20 cm Ah horizon containing coarse skeletal elements.
Comments: moderate sheep grazing

Vegetation:
– herb layer (cover 95%):
Linum catharticum, *Linum austriacum*, *Thymus praecox*, *Briza media*, *Asperula cynanchica*, *Hippocrepis comosa*, *Chrysanthemum leucanthemum*, *Gymnadenia conopsea*, *Lotus corniculatus*, *Leontodon hispidus*, *Anthyllis vulneraria*, *Euphorbia cyparissias*, *Salvia pratensis*, *Sanguisorba minor*, *Cirsium acaule*, *Hieracium pilosella*, *Plantago media*, *Bupleurum falcatum*, *Carlina vulgaris*, *Carlina acaulis*, *Pimpinella saxifraga*, *Ononis repens*, *Ononis spinosa*, *Gentianella ciliata*
– moss and lichen layer (5%)
– litter layer (cover 0.1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 27.40°C, T_{MEAN} 14.86°C, F (moisture) 3.32, N (nutrients) 2.41, R (Ca^{++}) 7.79, M 3, PD 800, S 10

Ant species	nests / 100 m²
Lasius alienus	71.00
Solenopsis fugax	43.20
Lasius flavus	24.50
Tapinoma erraticum	22.60
Temnothorax interruptus	12.40
Myrmica specioides	9.10
Lasius jensi	3.60
Myrmecina graminicola	2.90
Formica rufibarbis	2.00
Formica sanguinea	1.40
Myrmica sabuleti	1.40
Temnothorax tuberum	1.00
Tetramorium caespitum	0.70
Lasius umbratus	0.70
Formica cunicularia	0.70
Formica fusca	0.70
Myrmica scabrinodis	0.40
Myrmica schencki 18.	0.40
total	198.70

Species richness index S_{100} 16.78 species / 100 m².

SP 117: Hörselberg W, Trockenrasen

Habitat type: xerothermous grassland on limestone
Date of investigation: 6 and 7 September 1984
Situation: Wutha-Bahnhof-0.8 km N, 50.9630°N, 10.3980°E, 420 m
Plot size: S-area 69 m², Q-area 69 m², habitat size 2 ha
Orography (slope and orientation of surface): 35°S
Soil conditions: cover of limestone rubble over 40 cm rendzina at the foot of a steep limestone scarp.
Comments: during cold (+9°C) and rainy weather on both days of investigation foraging activity was observed in only in *T. erraticum* and *F. sanguinea*.
Vegetation:
– shrub layer (2%):
Juniperus communis, *Crataegus* spec., *Prunus spinosa*, *Rosa* spec.
– herb layer (cover 50%):
Cirsium acaule, *Thymus praecox*, *Ophrys insectifera*, *Thalictrum minus*, *Sesleria albicans*, *Carex humilis*, *Euphorbia cyparissias*, *Sanguisorba minor*, *Potentilla tabernaemontani*, *Inula conyza*, *Vincetoxicum hirundinaria*, *Bupleurum falcatum*, *Knautia arvensis*
– moss and lichen layer (5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 28.40°C, T_{MEAN} 14.85°C, F (moisture) 3.15, N (nutrients) 2.54, R (Ca^{++}) 7.92, M 2, PD 800, S 50

Ant species	nests / 100 m²
Lasius alienus	54.50
Lasius flavus	20.30
Temnothorax unifasciatus	13.00
Tapinoma erraticum	8.70
Myrmica sabuleti	8.30

Tetramorium impurum	7.20
Temnothorax nigriceps	6.50
Temnothorax albipennis	5.50
Myrmecina graminicola	2.90
Lasius reginae	1.40
Ponera coarctata	1.40
Formica clara	1.40
Formica sanguinea	1.40
Myrmica specioides 14.	0.40
total	132.90

Species richness index S_{100} 14.02 species / 100 m².
During a visit after 18 years (12 June 2002), the plot appeared unchanged.

SP 118: Salem, Halbtrockenrasen
Habitat type: mesoxerophytic grassland on silty sand
Date of investigation: 28 July 1988
Situation: 1 km N Salem bei Malchin, 53.793°N, 12.803°E, 70 m
Plot size: S-area 36 m²
Orography (slope and orientation of surface): plateau on a hill top
Soil conditions: silty to loamy sand with diverse stones
Comments:
Vegetation:
– shrub layer (10%):
Rosa spec., *Genista* spec., *Prunus spinosa*
– herb layer (cover 95%):
Festuca ovina, *Thymus pulegioides*, *Hieracium pilosella*, *Fragaria* spec., *Trifolium minus*, *Pimpinella saxifraga*, *Potentilla* spec., *Prunella vulgaris*, *Ononis spinosa*, *Centaurium minus*, *Plantago lanceolata*, *Bellis perennis*, *Lotus corniculatus*, *Achillea millefolium*, *Agrimonia eupatorium*
– moss and lichen layer (5%)
– litter layer (cover 1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 21.70°C, T_{MEAN} 13.97°C, F (moisture) 4.00, N (nutrients) 3.50, R (Ca^{++}) 5.71, M 2, PD 800, S 5

Ant species	nests / 100 m²
Lasius flavus	55.60
Myrmica sabuleti	41.70
Lasius niger	16.70
Formica fusca	13.80
Formica cunicularia	11.10
Tetramorium caespitum	8.30
Myrmica rugulosa 7.	5.60
total	152.80

Species richness index S_{100} 8.74 species / 100 m².

SP 119: Bubenik, offene Basaltfläche
Habitat type: xerothermophytic plant community on basalt
Date of investigation: 22 May 1984
Situation: 4 km W Löbau, 51.0995°N, 14.6108°E, 360 m.
Plot size: S-area 17 m²
Orography (slope and orientation of surface): scarp (60°S) plus a plateau (0°) south of the scarp
Soil conditions: basaltic rock, on 50% of surface bare, 50% with sparse vegetation, humous soil only in clefts on < 20 % of surface.
Comments: former quarry
Vegetation:
– herb layer (cover 47%):
Potentilla tabernaemontani, *Potentilla argentea*, *Sedum acre*, *Erophila verna*, *Lychnis viscaria*, *Saxifraga granulata*, *Myosotis stricta*, *Spergularia rubra*
– moss and lichen layer (8%)
– physico-chemical factors, plant and stone density:

T_{MAX} 33.50°C, T_{MEAN} 16.75°C, F (moisture) 3.25, N (nutrients) 2.50, R (Ca^{++}) 4.50, M 3, PD 400, S 2

Ant species	nests / 100 m²
Tetramorium impurum	52.90
Temnothorax nigriceps	41.10
Lasius niger	29.40
Lasius flavus	23.50
Myrmica schencki	11.80
Camponotus ligniperda	5.90
Formica fusca	5.90
Myrmica scabrinodis	5.90
Leptothorax muscorum 9.	5.90
total	182.30

Species richness index S_{100} 13.75 species / 100 m².
A visit in 2016 showed no significant change of habitat structure.

SP 120: Niesendorf, Kiefern-Blaubeerwald
Habitat type: pine-blueberry forest
Date of investigation: 14 August 1982
Situation: 2 km WSW Niesendorf near Königswartha, 51.296°N, 14.291°E, 150 m.
Plot size: Q-area 100 m²
Orography (slope and orientation of surface): 0
Soil conditions: podzol with 15 cm Ah horizon
Comments: there was only investigation of dead wood and of stumps of cut pines but not of the litter – *Stenamma* is therefore missing from the list.
Vegetation:
– tree layer (50%)
Pinus silvestris 4, *Betula pendula* 1
– herb layer (cover 85%):
Vaccinium myrtillus, *Melampyrum pratense*, *Avenella flexuosa*, *Orthilia secunda*, *Calluna vulgaris*
– moss and lichen layer (15%)
– litter layer (cover 15%)
– dead wood on ground (cover 2%)
– physico-chemical factors, plant and stone density:
T_{MAX} 16.70°C, T_{MEAN} 13.75°C, F (moisture) 5.00, N (nutrients) 2.40, R (Ca^{++}) 2.00, M 2, PD 1500, S 0

Ant species	nests / 100 m²
Temnothorax crassispinus	52.00
Lasius platythorax	23.00
Leptothorax muscorum	10.00
Myrmica ruginodis	6.00
Leptothorax acervorum	3.00
Temnothorax unifasciatus	3.00
Myrmica rubra	1.00
Myrmica sabuleti	1.00
Harpagoxenus sublaevis 9.	1.00
total	100.00

Species richness index S_{100} : 9.00 species / 100 m².
During a follow-up investigation after 20 years were found: 8 *crassispinus*, 7 *platythorax*, 3 *Myrmica ruginodis*, 1 *Formica fusca* (at the margin to the road), 1 *Formica rufa*.

SP 121: Strohmberg, Halbtrockenrasen
Habitat type: mesoxerophytic grassland on basalt
Date of investigation: 13 May 1986, 10 July 1988, 11 July 1991
Situation: Weißenberg 2.5 km S, 51.1752°N, 14.6551°E, 258 m
Plot size: S-area 18 m², Q-area 40 m², habitat size 250 m²
Orography (slope and orientation of surface): 5 ° S
Soil conditions: ranker over basalt, bare basalt exposed on 20% of surface
Comments: small open area within a woodland in front of a basalt scarp, former quarry

Vegetation:
– shrub layer (5%):
Rosa spec., *Prunus spinosa*
– herb layer (80%):
Potentilla tabernaemontani, *Potentilla argentea*, *Sedum acre*, *Erophila verna*, *Lychnis viscaria*, *Saxifraga granulata*, *Myosotis stricta*, *Spergularia rubra*, *Luzula campestris*, *Hieracium pilosella*, *Pimpinella saxifraga*, *Achillea millefolium*, *Galium mollugo*, *Campanula patula*, *Campanula rotundifolia*
– moss and lichen layer (5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 28.20°C, T_{MEAN} 15.97°C, F (moisture) 3.60, N (nutrients) 2.64, R (Ca^{++}) 4.62, M 3, PD 800, S 0.5

Ant species		nests / 100 m²
Tetramorium impurum		38.90
Lasius paralienus		27.70
Lasius niger		22.20
Lasius flavus		22.20
Tetramorium caespitum		16.70
Temnothorax nigriceps		16.70
Myrmica schencki		5.60
Myrmecina graminicola		5.60
Myrmica scabrinodis		5.60
Lasius platythorax	10.	5.60
total		166.80

Species richness index S_{100} : 15.04 species / 100 m².
T. impurum together with *L. flavus* in more fresh spots. *T. caespitum* at dryer spots. *T. nigriceps* only in rock. A visit in 2013 showed strong changes of habitat structure by scrub encroachment.

SP 122: Zscheiplitz, Kalkschuttflächen

Habitat type: field of heaped limestone rubble
Date of investigation: 1 September 1981, 14 May 1989, 26 June 1991, 30 August 1994, 6 August 1995
Situation: Zscheiplitz 0.6 km W, 51.2150°N 11.7271°E, 190 m
Plot size: S-area 29 m²
Orography (slope and orientation of surface): 0°
Soil conditions: heap of limestone rubble, tailings from a quarry, assumedly dumped between 1930 and 1950, extremely dry, almost no humous soil.
Comments: sum of five separate subareas of very similar structure. Plant succession very slow.
Vegetation:
– shrub layer (5%):
Rosa spec., *Cornus sanguinea*
– herb layer (15%):
Bupleurum falcatum, *Origanum vulgare*, *Cynanchum vincetoxicum*, *Hieracium pilosella*, *Festuca ovina*
– moss and lichen layer (15%)
– dead wood on ground (cover 0.1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 30.90°C, T_{MEAN} 16.67°C, F (moisture) 2.50, N (nutrients) 2.50, R (Ca^{++}) 8.00, M 1, PD 150, S 40

Ant species		nests / 100 m²
Temnothorax nigriceps		41.40
Temnothorax unifasciatus		24.10
Temnothorax tuberum		17.20
Temnothorax albipennis		13.80
Myrmoxenus ravouxi		6.90
Temnothorax interruptus	6.	3.40
total		106.80

Species richness index S_{100} 7.91 species / 100 m².
A visit on 17 July 2006 showed significant scrub encroachment.

SP 123: Eisenharz, Harprechtsmoos

Habitat type: open area of a peat bog
Date of investigation: 7, 8 and 9 May 1993
Situation: Eisenharz 2 km E, 47.692°N, 9.984°E, 700 m
Plot size: Q-area 290 m²
Orography (slope and orientation of surface): 0 °
Soil conditions: peat bog soil
Comments: there is certainly under-recording of *Leptothorax* and *Harpagoxenus* because the S-search mode was not applied.
Vegetation:
– shrub layer (5%):
Pinus mugo
– herb layer (50%):
Andromeda polyfolia, *Eriophorum vaginatum*, *Calluna vulgaris*, *Vaccinium oxycoccus*, *Vaccinium uliginosum*, *Drosera rotundifolia*
– moss and lichen layer (60%)
Sphagnum, *Polytrichum*
– litter layer (cover 1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 19.80°C, T_{MEAN} 13.57°C, F (moisture) 8.45, N (nutrients) 1.33, R (Ca^{++}) 1.20, M 1, PD 1400, S 0

Ant species	nests / 100 m²
Lasius flavus	35.90
Myrmica scabrinodis	11.40
Myrmica lonae	7.60
Formica picea	2.40
Leptothorax acervorum	2.10
Harpagoxenus sublaevis	0.34
Formica sanguinea 7.	0.34
total	60.08

Species richness index S_{100} : 5.40 species / 100 m².
Myrmica lonae found in a clumped distribution.

SP 124: Wildenhainer Bruch, Moorregeneration

Habitat type: bog regeneration in a former peat-cutting site
Date of investigation: 21 August 1994
Situation: Battaune 3.2 km NE, 51.5523°N, 12.7614°E, 99 m
Plot size: Q-area 50 m²
Orography (slope and orientation of surface): 0 °
Soil conditions: peat bog soil, permanently water-drenched with occasional inundation.
Comments: Investigated was only the wet, regenerating phytoassociation along the margin line of the water-filled cutting sites. The dryer dams were excluded.
Vegetation:
– herb layer (70%):
Molinia caerulaea 4, *Phragmites australis* 2,*Eriophorum angustifolium* 2, *Comarum palustre*, *Agrostis canina*, *Viola palustris*, *Calamagrostis canescens*, *Hydrocotyle vulgaris*, *Drosera rotundifolia*, *Drosera intermedia*, *Pinus sylvestris*
– moss and lichen layer (30%)
Sphagnum fallax, *Polytrichum*
– physico-chemical factors, plant and stone density:
T_{MAX} 20.60°C, T_{MEAN} 14.88°C, F (moisture) 9.00, N (nutrients) 2.70, R (Ca^{++}) 3.22, M 1, PD 2000, S 0

Ant species	nests / 100 m²
Myrmica scabrinodis	26.00
Myrmica rubra	22.00
Lasius platythorax	20.00
Formica picea	12.00
Formica fusca	4.00
Myrmica ruginodis	2.00
Lasius flavus 7.	2.00
total	88.00

Species richness index S_{100} 8.10 species / 100 m².

All species nested in the tops of *Molinia* bults because of short-term increase of water level.

SP 125: Dübener Heide, Sandtrockenrasen

Habitat type: sandy xerothermous grassland on shut down military training area
Date of investigation: 19 August 1994
Situation: Addition of four similar subareas 2.6 km E, 3.0 km N, 4.0 km E and 4.7 km NE of Pressel, 51.579°N, 12.742°E, 112 m, 51.606°N, 12.714°E, 117 m, 51.578°N, 12.760°E, 116 m, 51.604, 12.759, 121 m
Plot size: S-area 250 m², Q-area 1000 m²
Orography (slope and orientation of surface): 0 °
Soil conditions: Sand with gravel and silt, compacted
Comments: former military training areas abandoned in 1991. Strong invasion of *Calamagrostis epigejos* in many places.
Vegetation:
– shrub layer (4%, 0.5-1 m high)
Pinus sylvestris, *Betula pendula*
– herb layer (45%):
Calamagrostis epigejos, *Hieracium pilosella*, *Conyza canadensis*, *Leontodon autumnalis*, *Holcus lanatus*, *Veronica officinalis*, *Hypericum perforatum*, *Achillea millefolium*, *Spergularia rubra*, *Calluna vulgaris*, *Holcus mollis*, *Danthonia decumbens*, *Agrostis capillaris*, *Hypochoeris radicata*, *Deschampsia flexuosa*, *Festuca ovina*, *Juncus effusus*, *Tanacetum vulgare*, *Anthoxantum odoratum*, *Potentilla argentea*, *Cerastium pumilum*, *Filago minima*, *Hieracium laevigatum*, *Hieracium echioides*, *Jasione montana*, *Erophila verna*, *Scleranthus perennis*, *Erigeron acris*, *Plantago major*, *Plantago lanceolata*, *Rumex acetosella*
– moss and lichen layer (22%)
Cladonia spec.,
– physico-chemical factors, plant and stone density:
T_{MAX} 29.60°C, T_{MEAN} 16.86°C, F (moisture) 3.66, N (nutrients) 3.12, R (Ca^{++}) 3.59, M 5, PD 600, S 0

Ant species	nests / 100 m²
Tetramorium caespitum	31.60
Lasius niger	24.80
Formica sanguinea	2.40
Formica clara	2.00
Strongylognathus testaceus	0.80
Lasius psammophilus	0.40
Formica cinerea	0.40
Myrmica specioides	0.40
Formica fusca	0.40
Lasius umbratus	0.40
Myrmica schencki	0.20
Myrmica gallienii	0.20
Formica cunicularia	0.10
Formica rufibarbis 14.	0.10
total	64.20

Species richness index S_{100} 4.79 species / 100 m².
The unusual dominance of *Lasius niger* over *Lasius psammophilus* in a sandy xerothermous grassland was probably mainly caused by the strong mechanical stress on the soil due to the military training activities and possibly also by faster immigration after the end of activities.

SP 126: Benediktbeuern, Moorheide

Habitat type: heath in a dehydrated peat bog
Date of investigation: 6 July 1994
Situation: Benediktbeuern-Kloster 5 km WSW, 47.6916°N, 11.3602°E, 605 m
Plot size: Q-area 40 m²
Orography (slope and orientation of surface): 0 °
Soil conditions: dehydrated peat bog soil
Comments: stronger development of heath due to drainage measures
Vegetation:

– shrub layer (2%):
Pinus mugo
– herb layer (80%):
Calluna vulgaris, *Drosera rotundifolia*, *Andromeda polyfolia*, *Vaccinium oxycoccus*
– moss and lichen layer (30%)
Sphagnum
– litter layer (cover 15%)
– physico-chemical factors, plant and stone density:
T_{MAX} 18.70°C, T_{MEAN} 13.75°C, F (moisture) 7.00, N (nutrients) 2.00, R (Ca^{++}) 1.50, M 1, PD 2000, S 0

Ant species		nests / 100 m²
Leptothorax acervorum		17.50
Tetramorium caespitum		12.50
Lasius platythorax		12.50
Myrmica lonae		7.50
Myrmica scabrinodis		2.50
Formica sanguinea		2.50
Lasius flavus		2.50
Formica fusca	8.	2.50
total		60.00

Species richness index S_{100} 9.74 species / 100 m².

SP 127: Wansleben, Salicornia-Zone

Habitat type: Salicornia-Puccinelia zone in a saline
Date of investigation: 13 May 1996
Lage: Langenbogen 1.5 km SW, 51.4724°N, 11.7660°E, 95 m
Plot size: Q-area 50 m²
Orography (slope and orientation of surface): 0 °
Soil conditions: salty moist mud at the margin of a salt water pond
Comments:
Vegetation:
– herb layer (40%):
Salicornia europaea, *Puccinellia distans*
– moss and lichen layer (0%)
– physico-chemical factors, plant and stone density:
T_{MAX} 25.80°C, T_{MEAN} 16.15°C, F (moisture) 7.70, N (nutrients) 7.00, R (Ca^{++}) 7.50, M 3, PD 400, S 0

Ant species		nests / 100 m²
Myrmica gallienii		26.00
Myrmica specioides		2.00
Myrmica scabrinodis	3.	2.00
total		30.00

Species richness index S_{100} 3.47 species / 100 m².

SP 128: Wansleben, Phragmites-Zone

Habitat type: Phragmites stand on salty ground
Date of investigation: 13 May 1996
Situation: Langenbogen 1.5 km SW, 51.4717°N, 11.7656°E, 95 m
Plot size: Q-area 50 m²
Orography (slope and orientation of surface): 0 °
Soil conditions: water-logged, periodically inundated, salty
Comments: light *Phragmites* stand near to a saline
Vegetation:
– herb layer (85%):
Phragmites australis
– moss and lichen layer (0%)
– physico-chemical factors, plant and stone density:
T_{MAX} 18.50°C, T_{MEAN} 14.59°C, F (moisture) 8.00, N (nutrients) 7.00, R (Ca^{++}) 7.50, M 1, PD 2500, S 0

Ant species	nests / 100 m²
Myrmica gallienii	28.00

Lasius flavus	2.	2.00
total		30.00

Species richness index S_{100} 2.31 species / 100 m².

SP 129: Federsee, Großseggenried

Habitat type: tall sedge stand
Date of investigation: 25 May 1991
Situation: Bad Buchau 2 km E, 48.0816°N, 9.6189°E, 578 m
Plot size: Q-area 38 m²
Orography (slope and orientation of surface): 0 °
Soil conditions: fen soil in the siltation zone of a flat lake, usually inundated, rarely falling dry.
Comments: Under average water level, the foots of sedge tussocks stand always in water and their tops are about 0.5 m above the water – i.e., each bult is an isolated island habitat. The tussocks may be entirely submerged for several days during high floods. During extreme drought the whole ground may fall dry. The tussocks are rather dry at surface and humous in deeper layers and allow the epiphytic growth of other swamp plants. The *Myrmica gallienii* nests in the very solid and voluminous *Carex appropinquata* tussocks do not have upper exits. This results in a diving bell effect and good survival of nest populations during extreme floods.
Vegetation:
– herb layer (40%):
Carex appropinquata 6, *Carex elata* 1, *Myosotis palustris* +, *Galium palustre* +
– moss and lichen layer (0%)
– physico-chemical factors, plant and stone density:
T_{MAX} 16.70°C, T_{MEAN} 13.31°C, F (moisture) 9.00, N (nutrients) 4.00, R (Ca^{++}) 6.25, M 1, PD 2500, S 0

Ant species		nests / 100 m²
Myrmica gallienii	1.	40.00
total		40.00

Species richness index S_{100} : 1.00 species / 100 m².

SP 130: Federsee, Kohldistelwiese

Habitat type: Cabbage thistle meadow
Date of investigation: 1982, data provided by Wolfgang Münch
Situation: Seekirch 0.8 km S, 48.0989°N, 9.6423°E, 578 m
Plot size: Q-area 60 m²
Orography (slope and orientation of surface): 0 °
Soil conditions: transition zone from organic fen soil to mineralic soil
Comments: Münch considered 5 workers without broods at the same spot as indication of a nest. This implies a high risk that accumulations of workers at colonies of root aphids in particular may be misinterpreted as a nest. In order to compensate for this putative error, I reduced Münch's nest densities to 50%.
Vegetation:
– herb layer (90%):
Cirsium oleraceum, *Carex gracilis*
– moss and lichen layer (22%)
– litter layer (cover 1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 16.30°C, T_{MEAN} 12.83°C, F (moisture) 8.10, N (nutrients) 4.10, R (Ca^{++}) 6.10, M 1, PD 3000, S 0
Temperatures were determined by geographically adjusted guiding values.

Ant species		nests / 100 m²
Myrmica scabrinodis		36.70
Myrmica gallienii		13.30
Myrmica vandeli		8.30
Myrmica ruginodis		8.30
Lasius platythorax	5.	6.70
total		73.30

Species richness index S_{100} 5.56 species / 100 m².

SP 131: Halbendorf, Truppenübungsplatz, Sandtrockenrasen
Habitat type: sandy xerothermous grassland
Date of investigation: 16 May 1991
Situation: Halbendorf 1.5 km W, 51.2946°N, 14.5344°E, 140 m
Plot size: S-area 80 m², Q-area 300 m²
Orography (slope and orientation of surface): 0 °
Soil conditions: sandy soil
Comments: military training area shut down in 1990
Vegetation:
– shrub layer (4%, 0.5-2.0 m high)
Pinus sylvestris, *Betula pendula*
– herb layer (45%):
Corynephorus canescens, *Calluna vulgaris*, *Deschampsia flexuosa*, *Festuca ovina*, *Juncus effusus*, *Jasione montana*, *Calamagrostis epigejos*, *Hieracium pilosella*, *Hypericum perforatum*, *Achillea millefolium*, *Hypochoeris radicata*, *Erophila verna*, *Rumex acetosella*
– moss and lichen layer (20%)
Polytrichum piliferum, Cladonia spec.
– litter layer (cover 2%)
– physico-chemical factors, plant and stone density:
T_{MAX} 29.70°C, T_{MEAN} 17.10°C, F (moisture) 3.43, N (nutrients) 3.09, R (Ca^{++}) 2.78, M 4, PD 600, S 0

Ant species	nests / 100 m²
Lasius niger	26.20
Tetramorium caespitum	25.00
Lasius psammophilus	18.80
Formica clara	2.70
Myrmica specioides	2.50
Myrmica sabuleti	2.50
Formica fusca	1.30
Myrmica schencki	1.20
Myrmica gallienii	1.20
Myrmica constricta	1.20
Formica sanguinea	1.00
Formica cinerea	0.70
Formica cunicularia	0.30
Formica rufibarbis 14.	0.30
total	84.90

Species richness index S_{100} 11.22 species / 100 m².
The dominance of *L. niger* over *L. psammophilus* in a sandy xerothermous grassland is remarkable and probably explained by mechanic stress on soil surface due to military training activities (see also SP 125). There was a very dense succession of *Pinus* woodland, which was transormed to a forestry structure by clearcutting of rows in regular intervals by the year 2016.

SP 132: Dubring, verheidetes Hochmoor
Habitat type: moist heath in peat bog
Date of investigation: 4 August 1995
Situation: Dubring-2.6 kmW, 51.3976°N, 14.1638°E, 130 m
Plot size: S-area 28 m²
Orography (slope and orientation of surface): 0 °
Soil conditions: peat bog soil over a 3-meters thick peat body
Comments: topographically identical with SP 87 investigated 13 years ago. Margin zone of former peat-cutting site. The whole area of the bog has been affected by decreasing water supply during the years 1982-1995 resulting in spreading of heath and pines. No area was similar to the situation in 1982. The current investigation selected an area with smallest cover of heather and largest cover of *Sphagnum*.
Vegetation:
– herb layer (60%):
Erica tetralix 35, *Calluna vulgaris* 25, *Rhynchospora alba*, *Eriophorum angustifolium*, *Drosera rotundifolia*, *Drosera intermedia*, *Pinus sylvestris*
– moss and lichen layer (80%)
Sphagnum

– litter layer (cover 8%)
– physico-chemical factors, plant and stone density:
T_{MAX} 23.10°C, T_{MEAN} 15.67°C, F (moisture) 8.50, N (nutrients) 1.70, R (Ca^{++}) 1.70, M 1, PD 1400, S 0

Ant species	nests / 100 m²
Myrmica scabrinodis	33.90
Formica picea	16.10
Lasius platythorax	7.10
Formica fusca 4.	3.60
total	60.70

Species richness index S_{100} 5.32 species / 100 m².

SP 133: Langteichhalde Laubmischwald (UF "A-Pappel")

Habitat type: 46-years-old heap afforestation with deciduous mixed forest
Date of investigation: 5 August 1998
Situation: Schönau-Berzdorf-3.5 km E, 51.06526°N, 14.93102°E, 239 m
Plot size: S-area 41 m² (4 x 8, 1 x 9 m²), Q-area 182 m²
Orography (slope and orientation of surface): 0°
Soil conditions: quaternary heap soil, silt-sand-loam
Comments: Long-term study plot on a high heap. Afforested in 1952 in equal percentages with poplar, robinia and black alder, the plot had developed in 1960 into a dense, almost impenetrable shrub. Pitfall trapping by Natural History Museum Görlitz in 1985 and 1997/98.
Vegetation:
– tree layer (cover 75%):
Populus spec. 3, *Robinia pseudoacacia* 3, *Acer pseudoplatanus* 2, *Alnus glutinosa* +, *Betula pendula* +
– shrub layer (cover 15%):
Acer pseudoplatanus 1, *Fraxinus excelsior* +, *Prunus padus* +, *Quercus robur* +, *Sambucus nigra* 2, *Rubus idaeus* +, *Symphoricarpus albus* +
– herb layer (cover 90%):
Galium aparine 4, *Moeringia trinerva* 2, *Poa nemoralis* 2, *Stachys sylvatica* 2, *Urtica dioica* 2, *Geum urbanum* 1, *Holcus mollis* 1, *Impatiens parviflora* 1, *Rubus fructicosus* 1, *Brachypodium sylvaticum*, *Geranium robertianum*, *Glechoma hederacea*, *Festuca gigantea*, *Rubus idaeus*, *Elymys canina*, *Humulus lupulus*, *Quercus robur*, *Fraxinus excelsior*, *Ribes rubrum* s.l., *Silene dioica* each +
– moss and lichen layer (15%)
Brachythecium rutabulum 2, *Brachythecium velutinum* 1, *Brachythecium populeum* +, *Brachythecium salebrosum* r, *Atrichum undulatum* 1, *Amblystegium serpens* +, *Dicranella heteromalla* +, *Eurhynchium striatum* +, *Pohlia nutans* +, *Ceratodon purpureus* r, *Plagiothecium denticulatum* r *Sphagnum*
– litter layer (cover 50%)
– dead wood on ground (cover 5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 16.42°C, T_{MEAN} 14.01°C, F (moisture) 5.94, N (nutrients) 6.53, R (Ca^{++}) 5.83, M 2, PD 3000, S 0.5

Ant species	nests / 100 m²	individuals in pitfall traps
Myrmica rubra	9.90	43
Myrmica ruginodis	9.30	40
Stenamma debile	4.80	4
Lasius platythorax	2.70	3
Lasius flavus	2.40	0
Lasius niger 6.	0.30	1
total	29.40	

Species richness index S_{100} 6.04 species / 100 m².
Nest density and species richness are similar to the conditions in comparable deciduous forests on natural soil. The higher abundance of *Myrmica rubra* compared to SP 134 is probably explained by the absence of conifers and slightly higher soil temperatures. The single observed worker of *Lasius niger* should indicate a nest surviving within the shady and cool habitat as more open areas with significant source populations are 200 m away. The trapping data of 1985 show that the same species were already present in that time.

SP 134: Langteichhalde Kiefernwald (UF "L-Kiefer")

Habitat type: 46-years-old heap afforestation with pines later supplemented by beach
Date of investigation: 6 August 1998
Situation: Schönau-Berzdorf-3.4 km E, 51.06482°N, 14.92993°E, 239 m
Plot size: S-area 54 m² (18+18+18 m²), Q-area 119 m²
Orography (slope and orientation of surface): 0°
Soil conditions: quaternary heap soil, silt-sand-loam
Comments: Long-term study plot on a high heap. Afforested in 1952 with *Pinus sylvestris*. Pines were poorly growing and placed underneath with *Fagus sylvatica* in about 1990. Pitfall trapping by Natural History Museum Görlitz in 1985 and 1997/98.
Vegetation:
– tree layer (cover 45%):
Pinus silvestris 3
– shrub layer (cover 20%):
Fagus silvatica 3, *Carpinus betulus* 2, *Quercus robur*, *Prunus serotina*, *Betula pendula*, *Acer negundo*, *Acer platanoides*, *Betula pendula*, *Rubus idaeus*, *Sambucus nigra*, *Prunus mahaleb*, *Prunus padus*, *Prunus avium*, *Corylus avellana*, *Sorbus aucuparia*, *Tilia cordata*
– herb layer (cover 100%):
Carex brizoides 3, *Poa nemoralis*, *Dactylis glomerata*, *Pyrola minor*, *Silene dioica*, *Prunus serotina* 1, *Agrostis capillaris*, *Arrhenaterum elatius*, *Brachypodium sylvaticum*, *Calamagrostis epigejos*, *Convolvulus arvensis*, *Deschampsia flexuosa*, *Deschampsia caespitosa*, *Epilobium angustifolium*, *Epilobiumm montanum*, *Equisetum arvense*, *Festuca rubra*, *Festuca brevipila*, *Fragaria vesca*, *Galium album*, *Galium aparine*, *Geum urbanum*, *Hieracium sabaudum*, *Holcus lanatus*, *Humulus lupulus*, *Moehringia trinerva*, *Othilia secunda*, *Quercus robur*, *Rubus idaeus*, *Rubus fructicosus*, *Rumex acetosella*, *Sorbus aucuparia*, *Stachys silvatica*, *Taraxacum officinale*, *Acer pseudoplatanus*, *Alopecurus pratensis*, *Athyrium filix-femina*, *Betula pendula*, *Chaerophyllum aromaticum*, *Cirsium vulgare*, *Dryopteris dilatata*, *Frangula alnus*, *Lapsana communis*, *Larix decidua*, *Lathyrus pratensis*, *Poa pratensis*, *Picea abies*, *Prunus avium*, *Prunus mahaleb*, *Scrophularia nodosa*, *Senecio ovatus*, *Symphoricarpus albus*, *Viburnum opulus*, *Urtica dioica*, *Impatiens parviflora*
– moss and lichen layer (cover 1%):
Brachythecium rutabulum 2, *Atrichum undulatum*, *Dicranella heteromalla*, *Lophocoela heterophylla*, *Pohlia nutans*
– litter layer (cover 5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 16.01°C, T_{MEAN} 13.91°C, F (moisture) 5.38, N (nutrients) 5.66, R (Ca^{++}) 5.11, M 2, PD 4000, S 0.5

Ant species		nests / 100 m²	individuals in pitfall traps
Myrmica ruginodis		19.30	195
Lasius platythorax		5.90	10
Myrmica rubra	3.	2.50	9
total		27.70	

Species richness index S_{100} 3.53 species / 100 m².
Nest density and species richness are clearly below data from pine forests on natural soils which is explained by the very dense *Carex brizoides* turf causing lower soil temperatures. 85% of ant nests were in thick deadwood exposed above the *Carex* and 15% near to surface of more sun-exposed grass pads. The trapping data of 1985 show that the same species were already present in that time.

SP 135: Frauenhagen Trockenrasen (G3 Nocke)

Habitat type: sandy xerothermous grassland
Date of investigation: 24 May**,** 5**,** 6, 19 July**,** 22 and 23 August 1997 through complete digging by Thomas Nocke and 12 May 2000 through nest search by B. Seifert.
Situation: Frauenhagen-1.4 km WNW, 53.0879°N, 14.0202°E, 50-55 m, in nature reserve NSG Breitenteichsche Mühle
Plot size: S-area 100 m²
Orography (slope and orientation of surface): SSW 10°
Soil conditions: extremely fine sand, calcareous
Comments: permanent grassland for at least 100 years, extensive sheep pasture
Vegetation:
– herb layer (cover 95%):

Agrimonia eupatoria eupatoria, *Arrhenaterum elatius*, *Artemisia campestris*, *Centaurea rhenana*, *Cirsium arvense*, *Convolvulus arvensis*, *Dactylis glomerata*, *Echium vulgare*, *Festuca ovina*, *Galium album*, *Helichrysum arenarium*, *Pleum phleoides*, *Plantago lanceolata*, *Poa angustifolia*, *Potentilla argentea*, *Senecio jacobaea*, *Trifolium campestre*, *Veronica spicata spicata*, *Vicia hirsuta*
– moss and lichen layer (cover 3%):
Brachythecium albicans
– physico-chemical factors, plant and stone density:
T_{MAX} 28.80°C, T_{MEAN} 16.94°C, F (moisture) 3.28, N (nutrients) 3.69, R (Ca^{++}) 5.91, M 3, PD 500, S 0

Ant species	nests / 100 m²
Lasius alienus	107.00
Lasius flavus	60.40
Lasius myops	22.60
Solenopsis fugax	21.00
Myrmica schencki	5.00
Tetramorium caespitum	4.90
Formica rufibarbis	3.90
Lasius niger	3.30
Formica cunicularia 9.	2.10
total	230.20

Species richness index S_{100} 9.01 species / 100 m².
The replacement of *L. psammophilus* by *L. alienus* is noteworthy.

SP 136: Offener Flussschotter Tauglgries (Sonja Weber Fläche A)

Habitat type: open gravel bank of river
Date of investigation: 1998, 1999 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Hallein-4.5 km SE, 47.6592°N, 13.1408°E, 450 m, at right bank of Taugl
Plot size: S-area 75 m², Q-area 100 m², habitat size: 2700 m²
Orography (slope and orientation of surface): 0°
Soil conditions: coarse gravel plus sand
Comments: immediately north of the Taugl
Vegetation:
– herb layer (cover 25%):
Alnus incana, *Salix eleagnos*, *Petasites paradoxus*, *Rubus caesisus*, *Betula pendula*, *Ranunculus repens*, *Silene vulgaris*
– litter layer (cover 2%)
only some leaf litter under scrubs
– dead wood on ground (cover 0.5%, small twigs)
– physico-chemical factors, plant and stone density:
T_{MAX} 30.00°C, T_{MEAN} 17.69°C, F (moisture) 6.30, N (nutrients) 5.00, R (Ca^{++}) 7.60, M 2, PD 780, S 40

Ant species	nests / 100 m²
Manica rubida	20.0
Formica fuscocinerea	10.8
Myrmica constricta	1.0
Tetramorium impurum 4.	1.0
total	40.8

Species richness index S_{100} 3.59 species / 100 m².

SP 137: Lavendelweidengehölz Tauglgries (Sonja Weber Fläche B)

Habitat type: Salix eleagnos scrub on river bank
Date of investigation: 1998, 1999 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Hallein-4.5 SE 47.6592°N, 13.1408°E, 450 m, at the left bank of Taugl
Plot size: S-area 75 m², habitat size: 1170 m²
Orography (slope and orientation of surface): 0°
Soil conditions: gravel and sand, accumulation of humous soil between stones
Vegetation:
– shrub layer (cover 35%, mean height 2-3 m):
Salix eleagnos, *Alnus incana*, *Pinus sylvestris*, *Picea abies*
– herb layer (cover 40%, mean height 33 cm):

Calamagrostis salicifolium, *Sesleria albicans*, *Molinia arundinacea*, *Petasites paradoxus*, *Melampyrum pratense*, *Euphrasia rostkviana*, *Origanum vulgare*, *Salvia austriaca*, *Buphthalmum salicifolium*, *Viola hirta*

– moss and lichen layer (20%, 0.7 cm)

Tortella tortuosa

– litter layer (cover 5-40%, in patches 2 cm leaf litter)

– dead wood on ground (cover 4%)

– physico-chemical factors, plant and stone density:

T_{MAX} 25.30°C, T_{MEAN} 16.63°C, F (moisture) 4.50, N (nutrients) 2.75, R (Ca^{++}) 7.29, M 2, PD 1148, S 35

Ant species	nests / 100 m²
Manica rubida	38.80
Formica fuscocinerea	21.30
Myrmica constricta	20.40
Ponera coarctata	20.00
Leptothorax acervorum	5.30
Camponotus ligniperda (initial nests) 6.	4.00
total	109.80

Species richness index S_{100} 6.36 species / 100 m².

SP 138: Schneeheide-Kiefernwald Tauglgries (Sonja Weber Fläche C)

Habitat type: winter-heath-pine forest on river bank

Date of investigation: 1998, 1999 (Sonja Weber; nest search, grab samples, pitfall trapping)

Situation: Hallein-4.5 SE, 47.6592°N,13.1408°E, 450 m, at left bank of the Taugl

Plot size: S-area 75 m², habitat size: 3000 m²

Orography (slope and orientation of surface): 0°

Soil conditions: gravel and sand, accumulation of humous soil between stones

Comments: increasing scrub development diminished the habitat temperature and the xerothermous ant assemblage a relict of earlier, more sun-exposed succession stages.

Vegetation:

– tree layer (cover 25%,mean height 6 m):

Pinus sylvestris, *Alnus incana*, *Betula pendula*

– shrub layer (cover 30%, mean height 3 m):

Pinus sylvestris, *Alnus incana*, *Betula pendula*, *Salix eleagnos*, *Picea abies*, *Larix decidua*, *Frangula alnus*, *Berberis vulgaris*, *Fraxinus excelsior*, *Acer pseudoplatanus*, *Acer platanoides*

– herb layer (cover 45%):

Molinia caerulea, *Calamagrostis varia*, *Sesleria albicans*, *Carex ornithopoda*, *Carex alba*, *Carex flacca*, *Polygala chamaebuxus*, *Erica carnea*, *Petasites paradoxus*, *Euphrasia officinalis*, *Buphthalmum salicifolium*, *Galium album*, *Carduus defloratus*

– moss and lichen layer (5%, 1 cm)

Tortella tortuosa

– litter layer (cover 27%, in patches 2 cm high, pine needles, dead grass)

– dead wood on ground (cover 5%, branches 1.5 cm thick, thin twigs, single tree stems)

– physico-chemical factors, plant and stone density:

T_{MAX} 23.30°C, T_{MEAN} 16.18°C, F (moisture) 4.90, N (nutrients) 3.70, R (Ca^{++}) 7.60, M 2, PD 1970, S 35

Ant species	nests / 100 m²
Temnothorax nigriceps	48.00
Ponera coarctata	34.80
Lasius flavus	30.80
Manica rubida	25.20
Tetramorium impurum	25.00
Temnothorax unifasciatus	16.00
Lasius paralienus	14.80
Myrmica constricta	8.80
Leptothorax acervorum	8.00
Tetramorium caespitum	6.20
Formica fusca	6.00
Camponotus ligniperda	5.60
Myrmecina graminicola	4.00

Temnothorax interruptus		4.00
Myrmica sabuleti		1.20
Formica fuscocinerea		1.00
Formica cunicularia		1.00
Formica truncorum	18.	0.07
total		240.47

Species richness index S_{100} 16.96 species / 100 m².

SP 139: Grauerlenau Tauglgries (Sonja Weber Fläche D)

Habitat type: gray alder forest on river bank
Date of investigation: 1998, 1999 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Hallein-4.5 SE, 47.6592°N, 13.1408°E, 450 m, at left bank of the Taugl
Plot size: S-area 75 m², habitat size: 2000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: moist to wet sand
Vegetation:
– tree layer (cover 50%, mean height 20 m):
Alnus incana, *Acer pseudoplatanus*, *Fraxinus excelsior*
– shrub layer (cover 50%, mean height 7 m):
Cornus sanguinea, *Alnus incana*, *Acer pseudoplatanus*, *Picea abies*, *Salix eleagnos*, *Acer platanoides*, *Frangula alnus*, *Sambucus nigra*, *Corylus avellana*, *Clematis vitalba*, *Viburnum opulus*
– herb layer (cover 80%):
Clematis vitalba, *Cornus sanguinea*, *Euphorbia cyparissias*, *Fagus sylvatica*, *Frangula alnus*, *Fraxinus excelsior*, *Hedera helix*, *Impatiens parviflora*, *Lamium maculatum*, *Lamium purpureum*, *Petasites paradoxus*, *Picea abies*, *Quercus robur*, *Rubus caesius*, *Rubus idaeus*, *Salix eleagnos*, *Sambucus nigra*, *Silene vulgaris*, *Ulmus glabra*, *Viburnum opulus*
– moss and lichen layer (0%, 0 cm)
– litter layer (cover 52%, 1 cm leaf litter)
– dead wood on ground (cover 25%)
brushwood, thin branches and twigs, single decaying tree stems of 5-10 cm diameter
– physico-chemical factors, plant and stone density:
T_{MAX} 16.60°C, T_{MEAN} 14.67°C, F (moisture) 5.50, N (nutrients) 6.00, R (Ca^{++}) 7.10, M 2, PD 3520, S 30

Ant species		nests / 100 m²
Myrmica rubra	1.	5.20
total		5.20

Species richness index S_{100} : 1.0 species / 100 m². Nests of *M.rubra* in rotten branches.

SP 140: Fichtenmischwald Tauglgries (Sonja Weber Fläche E)

Habitat type: Spruce mixed forest on river bank
Date of investigation: 1998, 1999 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Hallein-4.5 SE, 47.6581°N,13.1515°E, 450 m, at left bank of the Taug, 540 m SW of Römerbrücke
Plot size: S-area 75 m², habitat size: 3500 m²
Orography (slope and orientation of surface): 0°
Soil conditions: mulll-mould-brown earth
Vegetation:
– tree layer (cover 70%, mean height 20 m):
Picea abies
– shrub layer (cover 50%, mean height 7 m):
Fraxinus excelsior, *Fagus sylvatica*, *Alnus incana*, *Acer pseudoplatanus*, *Cornus sanguinea*
– herb layer (cover 95%):
Carex alba, *Carex digitata*, *Moneses uniflora*, *Hylocomium splendens*, *Hepatica nobilis*, *Asarum europaeum*, *Euphorbia amygdaloides*, *Dryopteris filix-mas*, *Helleborus niger*, *Polygonatum multiflorum*, *Paris quadrifolia*
– moss and lichen layer (5%, usually on stems and stumps)
– litter layer (cover 70%, 1 cm leaf and needle litter)
– dead wood on ground (cover 25%)
stumps, twigs to 1 cm diameter, stems of 5 cm diameter
– physico-chemical factors, plant and stone density:
T_{MAX} 16.80°C, T_{MEAN} 14.72°C, F (moisture) 4.82, N (nutrients) 4.30, R (Ca^{++}) 6.50, M 2, PD 2850, S 0

Ant species		nests / 100 m²
Myrmica ruginodis		6.80
Temnothorax crassispinus		1.20
Formica polyctena	3.	0.07
total		8.07

Species richness index S_{100} 2.12 species / 100 m². Nests of *M.ruginodis* in rotten branches.

SP 141: Xerotherme Sukzessionsfläche Kippe Mühlrose

Habitat type: slow-succession xerotherm herb community on heap
Date of investigation: 11 April**,** 15 June 2001 (B. Seifert), Mai+Juni (Lydia Kreisel)
Situation: Mühlrose 1.7 km W, 51.4848°N, 14.4903°E, 145 m
Plot size: S-area 104 m², Q-area 160 m², habitat size: 2 ha
Orography (slope and orientation of surface): slope 3°, azimuth 0° (= south)
Soil conditions: protosoil, heaped mixed material of clay and sand, very solid, pure clay on 30% of surface. Ah horizon completely absent, acid, very few earthworms.
Comments: free succession on heaped protosoil dumped 18 years ago. The change between swelling, shrinking and hardening caused by the very high clay content seems to cause physicalic stress which limits species richness. 75% of surface remain plantless. Soil formation retarded.
Vegetation:
– tree layer (absent but few 5-meters tall *Pinus* near the plot):
– shrub layer (cover 4%, mean height 1 m):
Pinus sylvestris, *Betula pendula*, *Hippophae rhamnoides*
– herb layer (cover 22%):
Festuca trachyphylla, *Agrostis capillaris*, *Calamagrostis epigejos*, *Corynephorus canescens*, *Hypochoeris radicata*, *Calluna vulgaris* (few), *Tussilago farfara*, *Solidago canadensis*, *Carex ericetorum*, *Carex arenaria*, *Hypericum perforatum*, *Jasione montana*, *Helichrysum arenarium*, *Lactuca serriola*, *Dianthus deltoides*, *Ornithopus perpusillus*, *Vicia tetrasperma*, *Achillea millefolium*, *Tifolium arvense*, *Rumex acetosella*, *Hieracium pilosella*, *Trifolium dubium*, *Poa compressa*
– moss and lichen layer (1%, 0.2 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 32.00°C, T_{MEAN} 18.04°C, F (moisture) 3.65, N (nutrients) 2.91, R (Ca^{++}) 3.56, M 2, PD 200, S 0.1

Ant species		nests / 100 m²
Tetramorium caespitum		5.62
Formica clara		3.12
Formica cinerea		2.50
Manica rubida	4.	0.62
Summe		42.78

Species richness index S_{100} 4.28 species / 100 m².
Source populations of *Lasius psammophilus* are present in the environment (SP 111). Its absence on the plot is probably explained by the high clay content in the soil and retarded development of root aphid populations.

SP 142: Feuchte Hochstaudenflur, Ufersaum Reichendorfer Polder

Habitat type: moist tall herb community
Date of investigation: 5 June 2000, 15 June 2001
Situation: Diehsa-1.55 km NE, 51.25440°N, 14.78040°E, 159 m
Plot size: S-area 67 m², habitat size: 1000 m²
Orography (slope and orientation of surface): 3° NNW
Soil conditions: water-logged to variably moist bank of a reservoir, originally gravelly Podsol to Gley.
Comments: The plot has a 10% yearly risk of being inundated. The survey was done in a 10-meters wide area from the very margin of the water to the beginning of the fresh-dry, grassy part of the tall herb community. Moisture changes from wet to fresh-dry because the ground rises by 50 cm over 10 m length. The very wet patches contain fewer ant nests than the fresh ones.
Vegetation:
– shrub layer (cover 1%, mean height 2 m):
Alnus glutinosa, *Quercus robur*
– herb layer (cover 100%):

Phragmites australis, *Tanacetum vulgare*, *Calamagrostis epigejos*, *Solanum dulcamara*, *Lysimachia numularia*, *Cirsium arvense*, *Lysimachia vulgaris*, *Galium palustre*, *Linaria vulgaris*, *Lycopus europaeus*, *Achillea millefolium*, *Calamagrostis canescens*, *Phalaris arundinacea*, *Alopecurus pratensis*, *Deschampsia caespitosa*, *Mentha aquatia*
– moss and lichen layer (10%, 4 cm)
– litter layer (cover 3%)
in patches dead grass and herbs, quickly decomposing
– physico-chemical factors, plant and stone density:
T_{MAX} 17.10°C, T_{MEAN} 14.51°C, F (moisture) 7.21, N (nutrients) 5.43, R (Ca^{++}) 6.50, M 1, PD 5000, S 0

Ant species		nests / 100 m²
Myrmica gallienii		16.4
Myrmica scabrinodis		11.9
Myrmica rubra	3.	4.5
total		32.8

Species richness index S_{100} 3.26 species / 100 m².
The ants nearly always contructed mounds of soil and plant particles. Nests were preferentially in more sun-exposed parts of tussocks, more rarely under dense tall herbs. During a complete inundation 18 April 2002, 7 *scabrinodis*, 3 *rubra* and 1 *gallienii* nests were found escaping to the highest points of tussocks 30 m west of the plot. In 2016 there was complete encroachment of *Alnus* and *Betula*.

SP 143: Trassenheide Innendüne

Habitat type: stabilized coastal sand dune
Date of investigation: 2 July 2001
Situation: Trassenmoor (railway station)-0.9 km NNE, 54.09818°N, 13.87659°E, 5 m
Plot size: S-area 38 m², Q-area 100 m², habitat size: 2000 m²
Orography (slope and orientation of surface): 0-15° SW
Soil conditions: aeolic dune sand, almost without Ah horizon, most parts of surface fixed by mosses, lichens and vascular plants.
Comments: inner side of outer dune (Aussendüne) in front of a pine forest, on the Island of Usedom.
Vegetation:
– herb layer (cover 33%):
Corynephorus canescens, *Jasione montana*, *Carex arenaria*, *Artemisia campestre*, *Artemisia vulgaris*, *Galium mollugo*, *Helichrysum arenarium*, *Filago minima*, *Festuca ovina*, *Anthyllis vulneraria*
– moss and lichen layer (65%, 0.5 cm)
Polytrichum piliferum, *Cladonia* spec.
– litter layer (cover 2%, 0.5 cm, dead grass)
– dead wood on ground (cover 0.01%, few pine twigs)
– physico-chemical factors, plant and stone density:
T_{MAX} 32.30°C, T_{MEAN} 17.76°C, F (moisture) 2.79, N (nutrients) 2.63, R (Ca^{++}) 4.12, M 2, PD 400, S 0.01

Ant species		nests / 100 m²
Lasius niger		17.80
Myrmica constricta		15.60
Lasius psammophilus		15.60
Tetramorium caespitum		8.90
Myrmica rugulosa		8.90
Formica fusca		2.00
Formica cinerea		1.00
Formica rufa	8.	0.20
Total		70.00

Species richness index S_{100} 7.33 species / 100 m².

SP 144: Gasslandsukzessionsfläche Truppenübungsplatz (TÜP) Hainich

Habitat type: grassland succession on former military training area
Date of investigation: 11 June 2002 (Seifert)
Situation: Thiemsburg - 0.8 km SE, 51.0773°N, 10.5236°E, 310 m
Plot size: S-area 100 m², Q-area 400 m², habitat size: 40 ha
Orography (slope and orientation of surface): 2°N

Soil conditions: rendzina over shell limestone. Local soil compaction caused by heavy military vehicles was decreasing.
Comments: Former military training area shut down in 1990. Deep ruts (German: Spurrrinnen) still present but not keeping puddles (because of decreasing soil compaction?). Compared to military training areas on the sandy soils of the Oberlausitz, the development of scrub is slower here because the rapidly developing, dense and high herb layer hampers the growth of tree and bush saplings.
Vegetation:
– herb layer (cover 98%):
Potentilla anserina, *Dactylis glomerata*, *Alopecurus pratensis*, *Dipsacus silvester*, *Cirsium arvense*, *Briza media*, *Rumex crispus*, *Chaerophyllum aureum*, *Arrhenaterum elatius*, *Agrimonia eupatorium*, *Veronica chamaedrys*, *Galium album*, *Poa trivialis*, *Hypericum perforatum*, *Senecio jacobaea*, *Holcus lanatus*, *Ranunculus acris*, *Rhinanthus* spec., *Acer campestre*, *Acer platanoides*, *Fraxinus excelsior*, *Crataegus* spec.
– moss and lichen layer (cover 2%)
– litter layer (cover 1%, dead grass)
– physico-chemical factors, plant and stone density:
T_{MAX} 16.60°C, T_{MEAN} 13.54°C, F (moisture) 5.20, N (nutrients) 5.87, R (Ca^{++}) 7.38, M 4, PD 3000, S 0

Ant species	nests / 100 m²
Lasius niger	24.60
Myrmica gallienii	14.00
Myrmica curvithorax	4.00
Myrmica scabrinodis	3.00
Formica cunicularia	1.25
Formica rufibarbis	0.50
Lasius flavus	0.40
Formica sanguinea 8.	0.25
total	48.00

Species richness index S_{100} 6.15 species / 100 m².
Myrmica curvithorax is certainly in strong decline because the conditions of soil-compacted and vegetation-reduced military training areas, causing strong temperature and moisture amplitudes are no longer given. *Myrmica gallienii* takes advantage of the burrowing activity of wild boars which generate mounds of reversed sward providing termally favorable nests sites quickly colonized by the ants. Again it is remarkable how slowly *Lasius flavus* colonizes fallows of arable land or military training areas or how slowly it immigrates plant successions in former mining areas – recultivated or not.

SP 145: Kalktrockenrasen im Huy

Habitat type: xerothermous grassland on limestone
Date of investigation: 14 May 2002, 22 August 2003 (vegetation)
Situation: Sargstedt-3.2 km ENE, 51.9567°N, 11.0254°E, 260 m, vic. Halberstadt
Plot size: S-area 30 m², Q-area100 m², habitat size: 10600 m²
Orography (slope and orientation of surface): 10° S
Soil conditions: protorendzina on limestone with a lot of detached stone plates, a thin Ah horizon is developed in patches (there a rendzina).
Comments: the plot is situated in a large woodland. Removal of scrubs was done two or three years before investigation.
Vegetation:
– shrub layer (cover 5%, bis 1.5 m)
Cornus sanguinea, *Betula* spec., *Rosa* spec., *Prunus spinosa*, *Carpinus betulus*
– herb layer (cover 75%):
Geranium sanguineum, *Galium verum*, *Sanguisorba minor*, *Cirsium acaule*, *Echium vulgare*, *Cynanchum vincetoxicum*, *Cornus sanguinea*, *Briza media*, *Ligustrum vulgare*, *Quercus petraea*, *Gymnadenia conopsea*, *Carpinus betulus*, *Anthericium ramosum*, *Prunus spinosa*, *Rosa* spec., *Pimpinella saxifraga*, *Pinus sylvestris*, *Inula salicina*, *Peucedanum cervaria*, *Thesium linophyllon*, *Linum catharticum*, *Campanula rotundifolia*, *Helianthemum nummularium nummularium*, *Daucus carota*, *Plantago media*, *Arrhenaterum elatius*, *Carex hirta*, *Carex humilis*, *Thymus pulegioides puleguioides*, *Salvia pratensis*, *Hieracium pilosella*, *Euphorbia cyparissias*, *Potentilla pusilla*(or hybrid), *Agrimonia eupatorium*, *Bupleurum falcatum*, *Scabiosa ochroleuca*, *Scabiosa columbaria*, *Genista tinctoria*
– moss and lichen layer (5%)
– physico-chemical factors, plant and stone density:

T_{MAX} 27.60°C, T_{MEAN} 15.43°C, F (moisture) 3.56, N (nutrients) 2.72, R (Ca^{++}) 7.68, M 2, PD 1300, S 13

Ant species	nests / 100 m²
Solenopsis fugax	50.00
Lasius flavus	38.00
Lasius paralienus	37.30
Lasius alienus	36.20
Tapinoma subboreale	30.20
Temnothorax interruptus	24.00
Lasius niger	8.40
Myrmecina graminicola	3.40
Tetramorium caespitum	3.40
Myrmica schencki	2.00
Formica sanguinea	2.00
Myrmica specioides	1.00
Formica rufibarbis	0.40
Formica cunicularia 14.	0.40
total	236.70

Species richness index S_{100} 13.14 species / 100 m².

SP 146: Trockenrasen Weischütz

Habitat type: xerothermous limestone grassland
Date of investigation: 14 June 2002
Situation: Weischütz-Kirche-1.7 km NE, 51.2294°N,11.7239°E, 215 m, vic. Freyburg
Plot size: S-area 37 m², Q-area 133 m², habitat size: 600 m²
Orography (slope and orientation of surface): slope 24°, azimuth 344° (SSSE)
Soil conditions: rendzina on limestone with a lot of skeletal elements, in patches gritty.
Vegetation:
– shrub layer (cover 2%):
Rosa spec.
– herb layer (cover 50%):
Cotoneaster integerrimus, *Thymus praecox*, *Fumana procumbens*, *Hieracium pilosella*, *Salvia pratensis*, *Teucrium chamaedrys*, *Lotus corniculatus*, *Euphorbia cyparissias*, *Sanguisorba minor*, *Koeleria macrantha*, *Agrimonia eupatorium*, *Scabiosa ochroleuca*, *Hippocrepis comosa*, *Arrhenaterum elatius*, *Linum catharticum*, *Cuscuta epithymum*, *Festuca valesiaca*, *Brachypodium pinnatum*
– moss and lichen layer (1%)
– physico-chemical factors, plant and stone density:
T_{MAX} 30.90°C, T_{MEAN} 17.15°C, F (moisture) 3.13, N (nutrients) 2.59, R (Ca^{++}) 7.64, M 2, PD 400, S 4

Ant species	nests / 100 m²
Solenopsis fugax	37.80
Myrmica sabuleti	29.70
Lasius alienus	26.20
Temnothorax interruptus	21.60
Tapinoma subboreale	19.70
Tetramorium caespitum	16.20
Lasius myops	15.40
Lasius reginae	8.10
Temnothorax albipennis	5.40
Myrmecina graminicola	5.40
Lasius flavus	3.50
Formica cunicularia	2.30
Formica clara 13.	0.80
total	192.10

Species richness index S_{100} 13.68 species / 100 m².

SP 147: Tote Täler, Wiesenstreifen am Steinbruchrand

Habitat type: fresh-dry meadow in an ecotone from limestone protosoil to alluvial loam
Date of investigation: 23 August 1980 and 6 September 1981

Situation: Grosswilsdorf-1.2 km ESE, 51.1813°N, 11.7318°E, 120 m
Plot size: S-area 56 m², Q-area 75 m², habitat size: 75 m²
Orography (slope and orientation of surface): 8° S
Soil conditions: humous, mixed soil consisting of much limestone skelet and alluvial loam. R = 8.0
Comments: Immediately adjacent to and microclimatically and faunistically influenced by SP 8. Investigated was a 3-meters broad and 25-meters long stripe, stretching in east-west direction along the southern margin of the quarry forming SP 8. It represents an ecotone in the transition zone from humus-deficient protosoil on limestone to humic alluvial loam soil.
Vegetation:
– shrub layer (cover 0.5%):
Rosa spec.
– herb layer (cover 95%):
Pimpinella saxifraga, *Euphrasia stricta*, *Galium mollugo*, *Euphorbia cyparissias*, *Lotus corniculatus*, *Hieracium pilosella*, *Campanula* spec., *Bupleurum falcatum*, *Agrimonia eupatorium*, *Achillea millefolium*, *Plantago media*
– moss and lichen layer (cover 5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 23.20°C, T_{MEAN} 15.15°C, F (moisture) 3.70, N (nutrients) 3.00, R (Ca^{++}) 8.00, M 3, PD 1000, S 15

Ant species	nests / 100 m²
Lasius alienus	47.30
Tapinoma erraticum	21.00
Solenopsis fugax	20.00
Temnothorax tuberum	12.00
Temnothorax interruptus	9.00
Myrmica rubra	8.90
Lasius niger	7.10
Myrmica specioides	7.10
Formica cunicularia	5.40
Temnothorax albipennis	5.00
Lasius flavus	3.60
Lasius jensi	3.60
Myrmecina graminicola	2.70
Lasius reginae	1.80
Tapinoma subboreale	1.80
Myrmica schencki	1.80
Formica rufibarbis	1.80
Ponera coarctata	1.80
Myrmica sabuleti 19.	0.60
total	162.30

Species richness index S_{100} 18.80 species / 100 m².
There was an extreme species richness in 1980/81 due to the influence of the adjcent quarry (SP 8) and the marginal effect of the ecotone. With 24 nesting ant species found on an area of 131 m² (56 m² in SP 8 plus 75 m² in SP 147) the spot represented the highest small-scale ant diversity found in Sachsen-Anhalt in this time. 21 years later (14 June 2002), SP 147 was completely covered by scrubs and the shading was intensified by a 10-meters high grove grown up south of the plot.

SP 148: Kiesinsel Isar südlich Mittenwald (Lude, plots 1C+1D)

Habitat type: insular gravel bank
Date of investigation: 1994 (ants and structure Arnim Lude, plants B. Seifert & P. Gebauer)
Situation: Mittenwald (Pfarrkirche)-176°/2.8 km, Isar river-km 261.9, 47.419°N, 11.256°E, 932 m
Plot size: according to centroid method: 251.57 m².
Orography (slope and orientation of surface): 0°
Soil conditions: coarse gravel of limestone, 50 stones/m²
Comments: insular gravel bank in Isar river, about 0.7 m above mean water level, inundated more than once a year, age 2-10 years.
Vegetation: (Note: for all plots SP 148 – SP 154 censused by Arnim Lude, the investigation of indicator plants was done by B. Seifert & P. Gebauer in 2004. This did not allow a precise matching of the coordinates of ant- and plant-investigated spots. The plant investigation aimed at finding habitats of similar structure as described by Lude as close as possible to his original plots)

Vegetation:
– shrub layer (cover 20%, mean height 0.5 m):
Salix eleagnos, *Salix purpurea*
– herb layer (cover 11%):
Acinos alpinus, *Briza media*, *Buphtalmum salicifolium*, *Carduus defloratus*, *Carex flacca*, *Dryas octopetala*, *Galim anisophyllon*, *Hieracium bifidum*, *Hippocrepis comosa*, *Leucanthemum vulgare*, *Linaria alpina*, *Melica nutans*, *Petasites paradoxus*, *Polygala amarella*, *Salix purpurea*, *Sanguisorba minor*, *Silene vulgaris*, *Thymus praecox*, *Tolpis straticifolia*
– moss and lichen layer (cover 5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 25.80°C, T_{MEAN} 13.60°C, F (moisture) 4.47, N (nutrients) 2.44, R (Ca^{++}) 7.94, M 3, PD 550, S 50

Ant species		nests / 100 m²
Formica selysi	1.	7.95
total		7.95

Species richness index S_{100} 1.0 species / 100 m².

SP 149 Kiesbank an Isar südlich Mittenwald (Lude, plots 1A+1B)
Habitat type: hemixerophytic plant community on river bank
Date of investigation: 1994 (ants and structure Arnim Lude, plants B. Seifert & P. Gebauer)
Situation: Mittenwald (Pfarrkirche)-176°/2.8 km, river-km 261.9, 47.419°N, 11.256°E, 933 m
Plot size: centroid method 253.16 m²
Orography (slope and orientation of surface): 0°
Soil conditions: coarse limestone gravel fixed by fine material, 20 stones /m²
Comments: gravel bank of Isar river, approximately 1.2 above mean water level, inundated less than once a year, age 19-27 years
Vegetation:
– shrub layer (cover 17%, mean height 0.5 m):
Salix eleagnos
– herb layer (cover 30%):
Acinos alpinus, *Briza media*, *Buphtalmum salicifolium*, *Carduus defloratus*, *Carex flacca*, *Dryas octopetala*, *Galim anisophyllon*, *Hieracium bifidum*, *Hippocrepis comosa*, *Leucanthemum vulgare*, *Linaria alpina*, *Melica nutans*, *Petasites paradoxus*, *Salix purpurea*, *Sanguisorba minor*, *Saponaria ocymoides*, *Silene vulgaris*, *Thymus praecox*, *Tolpis straticifolia*
– moss and lichen layer (cover 5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 24.60°C, T_{MEAN} 13.34°C, F (moisture) 4.19, N (nutrients) 2.41, R (Ca^{++}) 7.88, M 3, PD 550, S 20

Ant species		nests / 100 m²
Formica selysi		3.90
Formica cinerea		1.75
Lasius psammophilus		1.65
Myrmica rubra		0.35
Lasius niger	5.	0.25
total		7.90

Species richness index S_{100} : 3.39 species / 100 m².

SP 150 Kiesinsel in der Isar westlich Vorderriss (Arnim Lude, plots 2M+2K)
Habitat type: insular gravel bank
Date of investigation: 1994 (ants and structure Arnim Lude, plants B. Seifert & P. Gebauer)
Situation: Vorderriss (church)-6.0 km WWSW, Isar river-km 241.5, 47.542°N, 11.358°E, 815 m
Plot size: centroid method, 253.16 m²
Orography (slope and orientation of surface): 0°
Soil conditions: encrusted sand and coarse, slightly fixed limestone gravel
Comments: insular gravel bank, appr. 0.7 m over the mean water level, age 10-12 years
Vegetation:
– shrub layer (cover 3%, mean height 0.5 m):
Salix eleagnos, *Myricaria germanica*, *Salix purpurea*
– herb layer (cover 15%):
Aethionema saxatile, *Briza media*, *Dryas octopetala*, *Echium vulgare*, *Euphorbia cyparissias*, *Galim anisophyllon*, *Galium album*, *Geranium robertianum*, *Hippocrepis comosa*, *Hypericum perforatum*,

Kernera saxatilis, *Leucanthemum vulgare*, *Lotus corniculatus*, *Medicago lupulina*, *Myricaria germanica*, *Petasites paradoxus*, *Polygala amarella*, *Pritzelago alpina*, *Rhinanthus glacialis*, *Salix eleagnos*, *Salix purpurea*, *Sanguisorba minor*, *Saponaria ocymoides*, *Sesleria albicans*, *Silene pusilla*, *Silene vulgaris*, *Thesium alpinum*, *Thymus praecox*, *Vicia villosa*

– moss and lichen layer (cover 5%)

– physico-chemical factors, plant and stone density:

T_{MAX} 26.50°C, T_{MEAN} 14.35°C, F (moisture) 4.65, N (nutrients) 2.74, R (Ca^{++}) 7.90, M 3, PD 400, S 20

Ant species		nests / 100 m²
Formica selysi		4.60
Lasius psammophilus		1.65
Manica rubida		0.75
Formica cinerea		0.55
Myrmica rubra		0.30
Lasius niger	6.	0.10
total		7.90

Species richness index S_{100} : 2.84 species / 100 m².

SP 151 Kiesbank an der Isar westlich Vorderriss (Lude, plots 2R+2C)

Habitat type: fresh-dry grassland on a riverbank

Date of investigation: 1994 (ants and structure A. Lude, plants B. Seifert & P. Gebauer)

Situation: Vorderriss(church)-6.0 km WWSW, Isar river-km 241.5, 47.542°N, 11.358°E, 815 m

Plot size: centroid method, Q-area 212.8 m²

Orography (slope and orientation of surface): 0°

Soil conditions: fixed limestone gravel.

Comments: bank of Isar river, appr. 0.2 m above mean water level, inundated several times a year, age 12-27 years

Vegetation:

– shrub layer (cover 10%, mean height 1.3 m):

Salix eleagnos

– herb layer (cover 55%):

Aethionema saxatile, *Briza media*, *Dryas octopetala*, *Echium vulgare*, *Galim anisophyllon*, *Galium album*, *Geranium robertianum*, *Hippocrepis comosa*, *Hypericum perforatum*, *Leucanthemum vulgare*, *Lotus corniculatus*, *Medicago lupulina*, *Myricaria germanica*, *Petasites paradoxus*, *Polygala amarella*, *Pritzelago alpina*, *Rhinanthus glacialis*, *Salix eleagnos*, *Salix purpurea*, *Sanguisorba minor*, *Saponaria ocymoides*, *Sesleria albicans*, *Silene pusilla*, *Silene vulgaris*, *Thesium alpinum*, *Vicia villosa*

– moss and lichen layer (cover 5%)

– litter layer (cover 0.5%)

– physico-chemical factors, plant and stone density:

T_{MAX} 26.50°C, T_{MEAN} 14.35°C, F (moisture) 4.87, N (nutrients) 2.85, R (Ca^{++}) 7.84, M 3, PD 400, S 20

Ant species		nests / 100 m²
Formica cinerea		5.70
Myrmica constricta		1.05
Lasius niger		0.95
Lasius psammophilus		0.50
Myrmica rubra		0.50
Formica selysi		0.45
Manica rubida	7.	0.25
total		9.40

Species richness index S_{100} 2.97 species / 100 m².

SP 152 Kiesinsel in der Isar SW Winkel (Lude, plots 3Fun+3Fob)

Habitat type: insular river bank of limestone gravel with sparse vegtation

Date of investigation: 1994 (ants and structure Arnim Lude, plants B. Seifert & P. Gebauer)

Situation: Winkel(church)-190°/3.0 km, Isar river-km 220.8, 47.613°N, 11.584°E, 709 m

Plot size: centroid method, 1000 m²

Orography (slope and orientation of surface): 0°

Soil conditions: unfixed, coarse limestone gravel, > 50 stones /m².

Comments: insular gravel bank of Isar, appr. 0.7 m over the mean water level, age 13-27 years

Vegetation:
– shrub layer (cover 25%):
Salix spec.
– herb layer (cover 5%):
Acer pseudoplatanus, *Aquilegia atrata*, *Cornus sanguinea*, *Euphorbia cyparissias*, *Frangula alnus*, *Galium album*, *Gypsophila repens*, *Lathyrus pratensis*, *Leontodon hispidus*, *Melica nutans*, *Salix eleagnos*, *Sesleria albicans*, *Silene vulgaris*, *Tussilago farfara*
– physico-chemical factors, plant and stone density:
T_{MAX} 28.10°C, T_{MEAN} 15.21°C, F (moisture) 5.00, N (nutrients) 3.73, R (Ca^{++}) 7.20, M 3, PD 200, S 50

Ant species		nests / 100 m²
Formica selysi		0.50
Formica fuscocinerea		0.15
Formica cinerea		0.10
Myrmica rubra	4.	0.10
total		0.85

Species richness index S_{100} 0.85 species / 100 m².

SP 153 Kiesbank an der Isar SW Winkel (Lude, plots 3D+3E+3L)
Habitat type: fresh-dry grassland on a river bank
Date of investigation: 1994 (ants and structure Arnim Lude, plants B. Seifert & P. Gebauer)
Situation: Winkel(church)-190°/2.8 km, Isar river-km 220.6, 47.613°N, 11.584°E, 709.3 m
Plot size: centroid method**,** 263.2 m²
Orography (slope and orientation of surface): 0°
Soil conditions: fixed limestone gravel, > 50 stones /m².
Comments: gravel bank of Isar river, appr. 1.2 m over the mean water level, age 29-37 years
Vegetation:
– shrub layer (cover 17%, mean height 45 cm):
Salix eleagnos, *Pinus sylvestris*, *Alnus incana*
– herb layer (cover 60%):
Briza media, *Buphtalmum salicifolium*, *Centaurea scabiosa*, *Dryas octopetala*, *Erica herbacea*, *Euphorbia cyparissias*, *Gentiana clusii*, *Gypsophila repens*, *Hieracium glaucum*, *Hippocrepis comosa*, *Leontodon hispidus*, *Leontodon incanus*, *Ophrys insectifera*, *Petasites paradoxus*, *Phyteuma orbiculare*, *Polygala amarella*, *Salix eleagnos*, *Sanguisorba minor*, *Sesleria albicans*, *Thesium rostratum*, *Thymus praecox*, *Tussilago farfara*
– moss and lichen layer (cover 5%)
– litter layer (cover 0.5%)
– physico-chemical factors, plant and stone density:
T_{MAX} 23.00°C, T_{MEAN} 14.14°C, F (moisture) 4.30, N (nutrients) 2.57, R (Ca^{++}) 8.33, M 3, PD 200, S 50

Ant species		nests / 100 m²
Formica cinerea		3.90
Lasius psammophilus		1.03
Myrmica constricta		0.87
Myrmica rubra		0.57
Formica fuscocinerea		0.43
Formica selysi		0.30
Myrmica rugulosa		0.20
Manica rubida		0.20
Temnothorax nigriceps	9.	0.10
total		7.60

Species richness index S_{100} 2.92 species / 100 m².

SP 154 Magerrasen an der Isar SW Winkel (Lude, plot 3M)
Habitat type: oligotrophic grassland on river bank of limestone gravel
Date of investigation: 1994 (ants and structure Arnim Lude, plants B. Seifert & P. Gebauer)
Situation: Winkel(church)-190°/2.8 km, Isar river-km 220.6, 47.613°N, 11.584°E, 709 m
Plot size: centroid method, 87.34 m²
Orography (slope and orientation of surface): 0°
Soil conditions: fixed river bank of limestone gravel, thin Ah horizon, surface without stones.

Comments: bank of Isar river, appr. 0.8 m over the mean water level, age >28 years
Vegetation:
– shrub layer (cover 30%, mean height 2 m):
Picea abies, *Pinus sylvestris*, *Salix purpurea*, *Salix eleagnos*, *Betula pendula*, *Crataegus monogyna*, *Viburnum lantana*
– herb layer (cover 100%):
Carex flacca, *Carex sempervirens*, *Centaurea scabiosa*, *Convallaria majalis*, *Dryas octopetala*, *Erica herbacea*, *Euphorbia cyparissias*, *Frangula alnus*, *Hieracium glaucum*, *Hippocrepis comosa*, *Laserpitium latifolium*, *Leontodon incanus*, *Lotus corniculatus*, *Petasites paradoxus*, *Phyteuma orbiculare*, *Polygala amarella*, *Potentilla erecta*, *Prunella vulgaris*, *Rhinanthus glacialis*, *Salix eleagnos*, *Sesleria albicans*, *Thymus praecox*
– moss and lichen layer (cover 3%)
– litter layer (cover 2%)
– physico-chemical factors, plant and stone density:
T_{MAX} 15.30°C, T_{MEAN} 12.53°C, F (moisture) 4.56, N (nutrients) 2.56, R (Ca^{++}) 7.33, M 3, PD 2000, S 0

Ant species	nests / 100 m²
Myrmica rubra	8.70
Lasius niger	6.50
Myrmica scabrinodis	2.20
Formica fusca	2.20
Myrmica schencki	1.10
Myrmica ruginodis	1.10
Myrmica lobicornis 7.	1.10
total	22.90

Species richness index S_{100} 7.20 species / 100 m².

SP 155: Sandtrockenflur ehem. TÜP Mücka

Habitat type: sandy xerothermous grassland
Date of investigation: 16 July 2002 (H. Martz & B. Seifert)
Situation: Mücka-0.85 km WNW, 51.3157°N, 14.6845°E, 146 m, vic. Niesky
Plot size: S-area 50 m², Q-area 300 m², pseudo-area *Formica* 588 m², habitat size: several ha
Orography (slope and orientation of surface): 1°N
Soil conditions: top soil 13 cm brown fine sand, over yellow fine sand, soil compaction begins in 8 cm depth.
Comments: military training area for heavy tanks shut down in 1991, 11 years without use, soil compaction still existing.
Vegetation:
– herb layer (cover 11%):
Corynephorus canescens 90, *Agostis tenuis* 2, *Calluna vulgaris* 2, *Rumex acetosella* 1, *Molinia caerulea* 2, *Hieracium pilosella* 1, *Spergula morisonii* 3, *Betula pendula* 2, *Pinus silvestris* 2
– moss and lichen layer (cover 85%, 0.5 cm)
Polytrichum piliferum, *Cladonia subulata*
– dead wood on ground (cover 0.1%, single pieces of boards)
– physico-chemical factors, plant and stone density:
T_{MAX} 32.00°C, T_{MEAN} 18.15°C, F (moisture) 3.50, N (nutrients) 1.88, R (Ca^{++}) 2.33, M 5, PD 80, S 0

Ant species	nests / 100 m²
Tetramorium caespitum	10.33
Lasius niger	1.67
Lasius psammophilus	1.33
Manica rubida	1.30
Strongylognathus testaceus	0.52
Formica clara	0.17
Formica sanguinea 7.	0.17
total	15.49

Species richness index S_{100} 4.8 species / 100 m².
There is control of woodland succession by nature conservancy management. In 2016, the structure was changed only little with very sparse upgrowth of single young *Pinus* trees.

SP 156: N-exp. Eichen-Steilhangwald Flussterrasse Deschka

Habitat type: mesothermic oak forest
Date of investigation: 23 July 2002 (Martz & Seifert)
Situation: Deschka 1.2 km SSW, 51.25015°N, 15.02239°E, 176 m, vic. Görlitz
Plot size: S-area 44.2 m², Q-area 121.1 m², habitat size: 1500 m²
Orography (slope and orientation of surface): 34° N
Soil conditions: 2 cm raw humus / 25 cm Ah horizon / gravelly sand of a pleistocenic river terrace.
Comments: the plot begins 2 m below the southern margin of the wood to arable land.
Vegetation:
– tree layer (cover 70%, mean height 20 m):
Quercus robur & *petraea* 16, *Pinus sylvestris* 2, *Tilia cordata* 1
– shrub layer (cover 7%, mean height 2 m):
Prunus padus, *Sorbus aucuparia*, *Tilia cordata*
– herb layer (cover 60%):
Poa nemoralis 75, *Dryopteris filix-mas* 25, *Evonymus europaea*, *Prunus padus*, *Galeopsis bifida*, *Impatiens parviflora*, *Hieracium sabaudum*, *Sedum maximum*, *Moehringia trinervia*, *Tilia cordata*
– moss and lichen layer (cover 6%)
– litter layer (cover 50%, in patches 2 cm leaf litter)
– dead wood on ground (cover 10%)
from thin twigs to stems of all sizes and stages of decomposition. Three standing tree trunks
– physico-chemical factors, plant and stone density:
T_{MAX} 17.00°C, T_{MEAN} 14.49°C, F (moisture) 4.48, N (nutrients) 5.11, R (Ca^{++}) 5.25, M 3, PD 800, S 0

Ant species		nests / 100 m²
Temnothorax crassispinis		410.11
Leptothorax gredleri		26.80
Myrmica ruginodis		4.95
Formica fusca		4.13
Lasius fuliginosus	5.	0.83
total		446.82

Species richness index S_{100} 4.80 species / 100 m².
Due to very strong competitive pressure by *T. crassispinus* on ground surface, *L.gredleri* was displaced into nest microhabitats 10 to 50 cm above surface (laying stems, strong branches, bark of pines). Microspaces on soil surface were almost completely occupied by *crassispinus*.

SP 157: Corynephoretum, Panzerfahrstrecke TÜP Nochten

Habitat type: sandy xerothermous grassland on heavily used tank training area
Date of investigation: 24 July 2002 (Martz & Seifert)
Situation: Bärwalde-5.9 km NW, 51.4490°N, 14.4655°E, 121 m
Plot size: S-area 91 m², Q-area 1100 m², habitat size: 1.5 km²
Orography (slope and orientation of surface): 0°
Soil conditions: light yellow sand without any visible Ah and seepage horizons (checked down to 50 cm depth) and no soil compaction down to this level.
Comments: the plot is situated in the centre of a training area of heavy tanks and is used several times a year with nearly each spot of soil being affected repeatedly.
Vegetation:
– shrub layer (cover 2%, mean height 0.5 m):
Pinus sylvestris
– herb layer (cover 15%):
Corynephorus canescens 15, *Agrostis tenuis*, *Calamagrostis epigeijos*, *Calluna vulgaris*, *Rumex acetosella*
– moss and lichen layer (cover 10%)
Polytrichum piliferum
– dead wood on ground (cover 0.1%, few pieces of crunched planks and bars)
– physico-chemical factors, plant and stone density:
T_{MAX} 32.60°C, T_{MEAN} 18.36°C, F (moisture) 2.70, N (nutrients) 2.80, R (Ca^{++}) 2.20, M 7, PD 90, S 0

Ant species		nests / 100 m²
Manica rubida		3.82
Lasius niger		1.09
Tetramorium caespitum	3.	0.36

total	5.27

Species richness index S_{100} 2.27 species / 100 m².
The deep burrower *Manica rubida* is apparently able to survive in rather good condition the surface affections caused by heavy tanks. *Lasius* and *Tetramorium* nested only at spots accidentally not touched. Due to continued use as military training area, there was, according to an aerial photo, no profound change of habitat structure until 2016.

SP 158: Sandtrockenrasen, Panzerfahrstrecke TÜP Nochten

Habitat type: sandy xerothermous grassland on occasionally used tank training area
Date of investigation: 24 July 2002 (Martz & Seifert)
Situation: Bärwalde-5.9 km NW, 51.4498°N, 14.4565°E, 121 m
Plot size: S-area 79.7m², Q-area 176.2 m², habitat size: several ha
Orography (slope and orientation of surface): 0°
Soil conditions: 10 cm of ligh grey, not compacted sand; beneath 10 cm dark brown, compacted sand; beneath light yellow sand. Bare sand on 5-10% of surface.
Comments: beyond the centre of tank training area, each point of soil is affected after intervals of putatively 3-5 years.
Vegetation:
– shrub layer (cover 1%, mean height0.5 m):
Pinus sylvestris
– herb layer (cover 65%):
Agrostis tenuis 100, *Corynephorus canescens* 2, *Calamagrostis epigeijos* 1, *Calluna vulgaris*, *Festuca rubra*, *Hieracium pilosella*, *Jasione montana*, *Hypericum perforatum*, *Filago minima*, *Rumex acetosella*, *Hypochoeris radicata*, *Betula pendula*
– moss and lichen layer (cover 34%)
Polytrichum piliferum, *Cladonia fimbriata*, *Cladonia subulata*
– litter layer (cover 0.5%, dead grass)
– dead wood on ground (cover 0.1%, few pieces of crunched planks and bars)
– physico-chemical factors, plant and stone density:
T_{MAX} 29.80°C, T_{MEAN} 17.70°C, F (moisture) 3.25, N (nutrients) 2.18, R (Ca^{++}) 2.90, M 6, PD 880, S 0

Ant species	nests / 100 m²
Tetramorium caespitum	15.55
Lasius niger	11.23
Lasius psammophilus	9.50
Formica clara	3.41
Myrmica schencki	0.86
Strongylognathus testaceus	0.86
Myrmica specioides 7.	0.43
total	41.84

Species richness index S_{100} 6.30 species / 100 m².
Due to continued use as military training area, there was no profound change of habitat structure until 2016.

SP 159: Kiefernwald Deschka

Habitat type: Pinus sylvestris forest
Date of investigation: 29 –31 July 2002 (Holger Martz)
Situation: Deschka-0.4 km S, 51.2567°N, 15.0256°E, 175 m, vic. Görlitz
Plot size: S-area 76.5 m², Q-area 155.5 m², habitat size: 2100 m²
Orography (slope and orientation of surface): 30° WSW
Soil conditions: 1 cm litter, 6 cm mould, 4 cm Ah horizon over a mixture of fine gravel and sand of a Pleistocene river terrace.
Comments: many wooden bars and plates on ground (deposited rubbish from nearby village), exceeding the cover percentage of natural dead wood. Upper demarcation of plot 2 m below upper edge of the slope, lower demarcation 1.5 m above the foot of the slope. At the foot of the slope are oaks along a county lane with some transferred garden vegetation (*Vinca* etc.)
Vegetation:
– tree layer (cover 55%, mean height 13 m):
Pinus sylvestris 9, *Quercus robur* 1

– shrub layer (30%, mean height 3 m):
Robinia pseudacacia, *Sorbus aucuparia*, *Sambucus nigra*, *Frangula alnus*, *Prunus* spec.
– herb layer (cover 15%, mean height 30 cm):
Calluna vulgaris, *Berberis vulgaris*, *Hieracium lachenalii*, *Hieracium sabaudum*, *Campanula rotundifolia*, *Galeopsis* spec., *Avenella flexuosa*, *Calamagrostis epigejos*, *Agrostis capillaris*, *Festuca ovina*
– moss and lichen layer (cover 0.5%, mean height 2 cm)
– litter layer (cover 95%, 1 cm high)
largely needle litter; at places with pinecones 6 cm thick; only small portions of acorns and litter of broad-leafed trees.
– dead wood on ground (cover 4%)
few tree stumps of 15-20 cm diameter, twigs of 0.3 to 5 cm diameter
– physico-chemical factors, plant and stone density:
T_{MAX} 20.70°C, T_{MEAN} 15.32°C, F (moisture) 4.38, N (nutrients) 3.44, R (Ca^{++}) 3.62, M 3, PD 450, S 0

Ant species	nests / 100 m²
Temnothorax crassispinus	87.58
Leptothorax gredleri	6.54
Myrmica rubra	4.33
Formica fusca	4.33
Leptothorax acervorum	3.92
Myrmica scabrinodis	1.24
Myrmica ruginodis	1.24
Myrmica lobicornis	0.93
Formica rufa 9.	0.64
total	110.75

Species richness index S_{100} : 8.37 species / 100 m².

SP 160: Sphagnum-Rasen im Isermoor
Habitat type: wet *Sphagnum* stand in montane peat bog
Date of investigation: 5 August 2002 (Martz & Seifert)
Situation: Swieradow-Zdroij-4.8 km SSW, 50.8675°N, 15.3155°E, 835 m
Plot size: S-area 285 m², Q-area 570 m², habitat size: > 1 ha
Orography (slope and orientation of surface): 0°
Soil conditions: peat bog soil over 2 m peat body.
Comments: the water table of the bog is somewhat lowered by a drainage ditch. There is a moderate rewetting measure by the blockade of a ditch with dead wood. *Sphagnum* stand wet but not quaking.
Vegetation:
– tree layer (cover in 1950 probably 15%, completely dead since about 1977 and no upgrowth of new trees, height 6-9 m):
Picea abies
– shrub layer (cover 3%, Height 1-2 m):
Picea abies
– herb layer (cover 25%):
Eriophorum angustifolium, *Molinia caerulea* 1, *Carex rostrata* 1, *Avenella flexuosa* 1, *Vaccinium oxycoccus* 1, *Vaccinium vitis-idaea* 3, *Vaccinium myrtillus* 3
– moss and lichen layer (cover 92%, 5 cm)
Sphagmum (all 8 species of Joanna Potocka's list: F = 7.1, R = 1.4), *Polytrichum* spec.
– dead wood on ground (cover 1%, fallen spruce branches and trunks)
– physico-chemical factors, plant and stone density:
T_{MAX} 22.20°C, T_{MEAN} 12.01°C, F (moisture) 7.55, N (nutrients) 2.29, R (Ca^{++}) 2.20, M 2, PD 800, S 0

Ant species	nests / 100 m²
Myrmica ruginodis	7.92
Myrmica scabrinodis	3.30
Camponotus herculeanus	0.35
Formica sanguinea 4.	0.18
total	11.75

Species richness index S_{100} 2.75 species / 100 m².
C. herculeanus: founding colony with two workers. Many founding gynes of *herculeanus* and one of *Lasius platythorax*.

SP 161: Fichtenwald im Isergebirge

Habitat type: montane spruce forest
Date of investigation: 6 August 2002 (Martz & Seifert)
Situation: Swieradow-Zdroij-4.0 km SSW, 50.8736°N, 15.3303°E, 907 m
Plot size: S-area 251 m², Q-area 1276 m² (61 spruce stems were checked for *C. herculeanus* nests), habitat size: many ha
Orography (slope and orientation of surface): 8° S
Soil conditions: 20 cm Ah horizon over brown earth (Berglehm) mixed with skelet of granite-gneiss.
Comments: The firs were exposed to strong sulphur dioxide immisions until about 1997 and showed strong smoke damage. 25% of the spruce stems were removed in 1992-97. The thinning of canopy caused an increase of *Calamagrostis* and *Vaccinium* at the expense of *Avenella*. The condition of spruce had improved in 2002 with the oldest living needle generation being 4 years old.
Vegetation:
– tree layer (cover formerly 60%, height 18 m):
Picea abies (4.78 stems / 100 m²)
– shrub layer (cover 0.1%, height 1 m):
Picea abies
– herb layer (cover 90%):
Vaccinium myrtillus 30, *Avenella flexuosa* 30, *Calamagrostis villosa* 30, *Trientalis europaea*, *Maianthemum bifolium*, *Galium harcynicum*, *Oxalis acetosella*, *Dryopteris dilatata*, *Juncus effusus*
– moss and lichen layer (cover 1%, 3 cm)
– litter layer (cover 2%, 4 cm needle litter)
– dead wood on ground (cover 10%, fallen spruce stems, piles of branches and brushwood)
– physico-chemical factors, plant and stone density:
T_{MAX} 13.60°C, T_{MEAN} 10.03°C, F (moisture) 5.20, N (nutrients) 2.78, R (Ca^{++}) 1.62, M 2, PD 1500, S 0

Ant species	nests / 100 m²
Myrmica ruginodis	1.24
Formica lemani	0.75
Camponotus herculeanus 3.	0.12
total	2.11

Species richness index S_{100} 1.91 species / 100 m².
4 founding gynes of *Myrmica ruginodis* and one of *Leptothorax acervorum*.
F. lemani nests at somewhat sunny patches in needle litter at the southern part of the spruce stem bases.

SP 162: Hochmoor am Polana Izerska

Habitat type: montane peat bog
Date of investigation: 12 August 2002
Situation: Swieradow Zdroij (station)-4.2 km S, 50.8758°N, 15.3466°E, 971 m
Plot size: S-area 119 m², habitat size: 500 m²
Orography (slope and orientation of surface): 0°
Soil conditions: peat bog soil over 200 cm peat body.
Comments: Comparably intact residual area of a formerly 17-ha large bog. The plot is surrounded by a weakly growing, strongly smoke-damaged spruce forest. Cutting of peat in the near environment at least until 1925 with drainage and then afforestion with spruce. Most of the spruce died until about 1970.
Vegetation:
– tree layer (cover 1%, mean height 4 m):
Picea abies
– shrub layer (cover 3%, Height 0.8-2.0 m):
Pices abies
– herb layer (cover 65%):
Eriophorum vaginatum 40, *Vaccinium oxycoccus* 40, *Carex nigra* 10, *Vaccinium uliginosum* 5, *Empetrum nigrum* 3, *Vaccinium myrtillus* 1, *Vaccinium vitis-idaea* 1, *Calluna vulgaris* 1, *Melampyrum pratense* 1
– moss and lichen layer (cover 80%, 4 cm)
Sphagnum spec. 75, *Polytrichum* spec. 5
– litter layer (cover 1%)

– dead wood on ground (cover 1%)
few fallen stems and branches of spruce having 8-13 cm diameter, standing stumps of 8-12 cm diameter sawed off in 60 cm height.
– physico-chemical factors, plant and stone density:
T_{MAX} 19.80°C, T_{MEAN} 10.81°C, F (moisture) 7.01, N (nutrients) 2.00, R (Ca^{++}) 1.88, M 2, PD 1100, S 0

Ant species	nests / 100 m²
Myrmica ruginodis	26.89
Formica lemani	21.01
Leptothorax acervorum	14.29
Camponotus herculeanus	0.84
Harpagoxenus sublaevis 5.	0.57
total	63.60

Species richness index S_{100} 4.19 species / 100 m².
L. acervorum only in dead wood. *F. lemani* excavated very flat but large-area nests in peat.
C. herculeanus: 1 founding gyne with a worker and many founding gynes with only eggs.

SP 163: Fahrweg auf ehemaligem TÜP Dauban

Habitat type: unpaved drive way in a heathland
Date of investigation: 16 August 2002 (Martz & Seifert)
Situation: Dauban-1.5 W, 51.28280°N, 14.60806°E, 150 m, vic. Bautzen
Plot size: S-area 126.7 m², Q-area 267.4 m², habitat size: 3000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: mixture of fine gravel, sand, and fine rubble over sandy soil. Soil of the ruts (forming 40% of surface) extremely compacted beginning from the uppermost milimeter. Compaction of soil outside the ruts (that is 60 % of surface, formed by the middle and the marginal stripes) beginning in 10 cm depth.
Comments: 3.20 m wide drive way on sandy soil in a former military training area. On both sides 66-cm wide marginal stripes, laterally confined by either *Sarothamnus* bushes or tall herb communities and to a lesser degree by sandy xerothermous grassland. The ruts were nearly free of vegetation and 63 cm wide. The middle stripe was 63 cm wide. The drive way was frequently used by heavy military vehicles untill 1990. After the shut down of the military training area it was infrequently used by light to heavy motor vehicles, bikers and pedestrians.
Vegetation:
– herb layer (cover 22%):
Ornithopus perpusillus, *Filago minima*, *Festuca ovina*, *Daucus carota*, *Leontodon autumnale*, *Leontodon nudicaulis*, *Trifolium arvense*, *Polygonum aviculare*, *Matricaria discoidea*, *Hieracium pilosella*, *Hieracium vulgatum*, *Sarothamnus scoparius*, *Calluna vulgaris*, *Hypochoeris radicata*, *Agrostis tenuis*, *Plantago major*, *Plantago lanceolata*, *Rumex acetosella*, *Tanacetum vulgare*, *Calamagrostis epigeijos*, *Populus tremula*, *Taraxacum officinale*, *Artemisia vulgaris*, *Echium vulgare*, *Jasione montana*
– moss and lichen layer (cover 5%)
Polytrichum piliferum, *Cladonia fimbriata*, *Cladonia subulata*
– physico-chemical factors, plant and stone density:
T_{MAX} 32.00°C, T_{MEAN} 18.15°C, F (moisture) 4.00, N (nutrients) 3.33, R (Ca^{++}) 2.86, M 6, PD 450, S 0

Ant species	nests / 100 m²
Tetramorium caespitum	10.20
Lasius niger	9.35
Formica cinerea	3.74
Lasius psammophilus	1.70
Myrmica schencki	1.13
Lasius flavus	1.13
Formica clara	0.67
Myrmica constricta	0.57
Formica cunicularia	0.22
Formica fusca 10.	0.22
total	28.93

Species richness index S_{100} 7.71 species / 100 m².

Shortly after the study, the area was tranformed into an Elk enclosure and there was only very occasional use as drive way after the fencing of the area leading to a stronger development of herblayer and moderate encroachment of scrubs as visible in an aerial photograph of 2016.

SP 164: Tilia-Acer-Hangwald Landeskrone

Habitat type: Date of investigation: 21 August -1 September 2002 (H.Martz)
Situation: Görlitz-5.2 SW (51.1269°N, 14.9330°E, 332 m
Plot size: S-area 45 m², Q-area 300 m², habitat size: 8000 m²
Orography (slope and orientation of surface): 15° S
Soil conditions: brown earth, top soil with at least 50 cm Ah horizon that contains much basalt rubble.
Comments: The 45 m² of the S-area surface were covered by 38 basalt stones or blocks having an average area of 400 cm² (maximum 1800 cm² in blocks).
Vegetation:
– tree layer (cover 88%, mean height 25 m):
Tilia cordata, *Acer pseudoplatanus*
– shrub layer (cover 7%, mean height 3 m):
Acer pseudoplatanus, *Acer platanoides*, *Cornus sanguinea*, *Corylus avellana*, *Crataegus* spec.
– herb layer (mean cover over the season 70%, in spring 90%, in late summer 50%):
Cornus sanguinea, *Acer pseudoplatanus*, *Acer platanoides*, *Tilia cordata*, *Fraxinus excelsior*, *Fagus sylvatica*, *Pulmonaria obscura*, *Galeobdolon luteum*, *Evonymus europaeus*, *Sambucus nigra*, *Rubus fruticosus* agg., *Impatiens parviflora*, *Geum urbanum*, *Arum maculatum*, *Asarum europaeum*, *Chaerophyllum temulum*, *Poa nemoralis*, *Corydalis cava*, *Corydalis intermedia*, *Ranunculus ficaria*, *Ribes uva-crispa*
– litter layer (cover 75%, 2 cm leaf litter)
– dead wood on ground (cover 20%, branches and stems up to 10 cm diameter)
– physico-chemical factors, plant and stone density:
T_{MAX} 15.00°C, T_{MEAN} 13.32°C, F (moisture) 5.53, N (nutrients) 6.53, R (Ca^{++}) 7.27, M 2, PD 750, S 0.8

Ant species	nests / 100 m²
Stenamma debile	13.33
Temnothorax crassispinus	11.11
Myrmica ruginodis	0.33
Lasius brunneus 4.	0.33
total	25.10

Species richness index S_{100} 2.57 species / 100 m².

SP 165: Bayerischer Wald, Naturwald, S.Weber 1.1

Habitat type: montane spruce forest
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Scharriegel, 48.9458°N, 13.5494°E, 945 m
Plot size: S-area 108 m², Q-area 2700 m²
Orography (slope and orientation of surface): 10° S
Soil conditions: loam over fixed glacial rubble, moraine rampart
Comments: By plant sociology the blue berry formation of a montane spruce forest. Spruce-beech forest with a very patchy, about 20-years-old understory of beech. Old spruce dead since 2000 due to strong attack by spruce bark beetle (*Ips typographicus*).
Vegetation:
– tree layer (cover 80%, mean height 32 m, 234 stems/ha):
Fagus sylvatica, *Picea abies* (dead), *Sorbus aucuparia*, *Abies alba*
– shrub layer (cover 1%, mean height 2 m):
Picea abies, *Abies alba*
– herb layer (cover 20%):
Abies alba, *Athyrium filix-femina*, *Avenella flexuosa*, *Dryopteris dilatata*, *Fagus sylvatica*, *Galeopsis bifida*, *Maianthemum bifolium*, *Moehringia trinervia*, *Oxalis acetosella*, *Picea abies*, *Prenanthes purpurea*, *Rubus idaeus*, *Sorbus aucuparia*, *Vaccinium myrtillus*
– moss and lichen layer (cover 0.5%, 2 cm)
– litter layer (cover 15%, 3.5 cm, spruce needles and beech leafes)
– dead wood on ground (cover 60%)

Extremly rich due to death of spruce: lying stems, piles of branches and brushwood and detached bark.

– physico-chemical factors, plant and stone density:

T_{MAX} 12.30°C, T_{MEAN} 10.67°C, F (moisture) 5.38, N (nutrients) 5.40, R (Ca^{++}) 3.57, M 3, PD 500, S 0

Ant species		nests / 100 m²
Formica lemani		0.46
Camponotus herculeanus	2.	0.20
total		0.66

Species richness index S_{100} 0.66 species / 100 m².

SP 166: Bayerischer Wald, Naturwald, S.Weber 1.2

Habitat type: montane spruce forest

Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)

Situation: Guglöd, 48.9372°N, 13.4356°E, 845 m

Plot size: S-area 108 m², Q-area 3850 m², habitat size: xxxx m²

Orography (slope and orientation of surface): 3° N

Soil conditions: very stony, sandy loam.

Comments: By plant sociology a former *Dryopteris dilatata*-fir-beech forest. Unused stand of old spruce with a 45-years-old unterstory of beech. All old spruce dead since 2000 due to strong attack by spruce bark beetle (*Ips typographicus*). Yet, groups or swarms of spruce saplings under gaps of the canopy. Upgrowth of fir, rowanberry and beech.

Vegetation:

– tree layer (cover 90-95%, mean height 36 m):

Old *Picea abies* (dead), *Fagus sylvatica* in understory, *Abies alba* single or in groups

– shrub layer (cover 3%, mean height1-3 m):

Abies alba, *Picea abies*, *Fagus silvatica, Sorbus aucuparia*

– herb layer (cover 4%):

Abies alba, *Calamagrostis villosa*, *Carex pilulifera*, *Dryopteris dilatata*, *Fagus sylvatica*, *Galeopsis bifida*, *Maianthemum bifolium*, *Picea abies*, *Prenanthes purpurea*, *Rubus fruticosus* agg., *Rubus idaeus*, *Vaccinium myrtillus*

– moss and lichen layer (cover 0,5%, 3cm)

– litter layer (cover 70%, 4 cm, spruce needles and beech leafes)

– dead wood on ground (cover 25%)

Few lying stems, piles of branches and brushwood and detached bark of spruce.

– physico-chemical factors, plant and stone density:

T_{MAX} 11.70°C, T_{MEAN} 11.03°C, F (moisture) 5.29, N (nutrients) 4.75, R (Ca^{++}) 2.80, M 3, PD 380, S 0

No ants! Species richness index S_{100} 0.0 species / 100 m².

The nearly closed beech canopy in combination with the northern slope cause a dark and cold microclimate throughout most of the season.

SP 167: Bayerischer Wald, Naturwald, S.Weber 1.3

Habitat type: montane spruce forest

Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)

Situation: "Gefällparkplatz", 48.9558°N, 13.3789°E, 885 m

Plot size: S-area 108 m², Q-area 3400 m²

Orography (slope and orientation of surface): 11° W

Soil conditions: loam over fixed glacial rubble

Comments: By plant sociology a former *Dryopteris dilatata*-fir-beech forest. Unaffected 125-years-old spruce-beech stand with beech understory. Many mossy granite blocks, in some areas block fields.

Vegetation:

– tree layer (cover 90%, mean height 36 m, 280 stems / ha):

Picea abies, *Fagus sylvatica*, single *Abies alba*

– shrub layer (cover 2%, mean height 2 m):

Sorbus aucuparia

– herb layer (cover 6%):

Abies alba, *Acer pseudoplatanus*, *Dryopteris dilatata*, *Fagus sylvatica*, *Oxalis acetosella*, *Picea abies*, *Polygonatum verticillatum*, *Prenanthes purpurea*, *Rubus idaeus*, *Sorbus aucuparia*, *Vaccinium myrtillus*
– moss and lichen layer (cover 1%, 3 cm)
– litter layer (cover 55%, 5 cm, spruce needles and beech leafes)
– dead wood on ground (cover 18%)
Few moderately to strongly rotten stems and piles of branches and brushwood of spruce.
– physico-chemical factors, plant and stone density:
T_{MAX} 12.30°C, T_{MEAN} 10.96°C, F (moisture) 5.43, N (nutrients) 6.00, R (Ca^{++}) 3.50, M 3, PD 320, S 0.5

No ants! Species richness index S_{100} 0.0 species / 100 m².
Potentially inhabitable by ants are less than 1% of plot area because of the dense canopy and thick litter layer.

SP 168: Bayerischer Wald, abgestorbener Wald, S.Weber 2.1

Habitat type: dead montane spruce forest with living beech
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: "Tierfreigelände", 48.9108°N, 13.4894°E, 870 m
Plot size: S-area 108 m²+180 m² open zones (free of fallen wood), Q-area 2350 m
Orography (slope and orientation of surface): 9° WNW
Soil conditions: loam
Comments: By plant sociology a former *Dryopteris dilatata*-fir-beech forest. First attack by spruce bark beetle (*Ips typographicus*) in 1997, complete damage in 1998. Now (2002) a dead wood of old spruce in the process of dissolution (storm damage) with masses of criss-cross lying stems. Single living trees of beech (40 years old) and spruce in the understory. Single granite blocks and stones, sunken into the soil and covered by moss and litter.
Vegetation:
– tree layer (cover 10%, mean height 15 m, dead stems more or less broken, 451 stems /ha):
Fagus sylvatica, *Picea abies*
– shrub layer (cover 5%, mean height 3 m):
Fagus sylvatica, *Abies alba*, *Sorbus aucuparia*, *Sambucus nigra*, *Sambucus racemosa*, *Betula pendula*
– herb layer (cover 10%):
Agrostis capillaris, *Athyrium filix-femina*, *Betula pendula*, *Blechnum spicant*, *Carex pilulifera*, *Dryopteris dilatata*, *Epilobium angustifolium*, *Fagus sylvatica*, *Maianthemum bifolium*, *Picea abies*, *Rubus fruticosus* agg., *Rubus idaeus*, *Sambucus nigra*, *Sambucus racemosa*, *Sorbus aucuparia*, *Vaccinium myrtillus*
– moss and lichen layer (cover 0.1%, 2 cm)
– litter layer (cover 30%, 3.5 cm, spruce needles and at places much beech leafes)
– dead wood on ground (cover 60%)
Criss-cross lying piled stems, branches and brushwood of spruce, fallen beech stems.
– physico-chemical factors, plant and stone density:
T_{MAX} 16.70°C, T_{MEAN} 12.10°C, F (moisture) 5.30, N (nutrients) 5.73, R (Ca^{++}) 3.12, M 2, PD 700, S 0

Ant species		nests / 100 m²
Myrmica ruginodis		0.93
Formica lemani	2.	0.93
total		1.86

Species richness index S_{100} 1.48 species / 100 m².
Potential nest habitat for ants were found in 5–15% of plot surface at more sun-exposed patches in or under moss placed on stones, on diverse wooden materials or on litter, additionally under bark or bark pieces on ground. Yet, most of these habitats were not used. There was only one initial nest of *Myrmica ruginodis* under moss on a rotten branch and one initial nest of *Formica lemani* under moss on a tree stump.

SP 169: Bayerischer Wald, abgestorbener Wald, S.Weber 2.2

Habitat type: dead montane spruce forest with living beech
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Guglöd, 48.9378°N, 13.4283°E, 845 m,

Plot size: S-area 108 m², Q-area 3800 m^2
Orography (slope and orientation of surface): 3° N
Soil conditions: stark steiniger, sandiger Lehm
Comments: By plant sociology a former *Dryopteris dilatata*-fir-beech forest. First attack by spruce bark beetle (*Ips typographicus*) in 1995, complete damage in 1998. Now (2002) a dead, unused spruce stand with 80- to 100-years-old living beech. Masses of spruce stems lying criss-cross.
Vegetation:
– tree layer (cover 45%, mean height 34 m, partially broken):
Fagus sylvatica
– shrub layer (cover 5%, Height bis 3 m):
Fagus sylvatica, *Acer pseudoplatanus*, *Sorbus aucuparia*, *Abies alba*
– herb layer (cover 15%):
Abies alba, *Acer pseudoplatanus*, *Athyrium filix-femina*, *Calamagrostis villosa*, *Carex pilulifera*, *Dryopteris dilatata*, *Epilobium angustifolium*, *Fagus sylvatica*, *Galeopsis bifida*, *Gymnocarpium dryopteris*, *Impatiens noli-tangere*, *Juncus effusus*, *Luzula pilosa*, *Lycopodium annotinum*, *Maianthemum bifolium*, *Mycelis muralis*, *Oxalis acetosella*, *Picea abies*, *Prenanthes purpurea*, *Rubus idaeus*, *Salix caprea*, *Sambucus nigra*, *Sorbus aucuparia*, *Taraxacum officinale*, *Thelypteris phegopteris*, *Vaccinium myrtillus*
– moss and lichen layer (cover 0.05%, 2cm)
– litter layer (cover 10%, 4 cm, spruce needles and much beech leafes)
– dead wood on ground (cover 80%)
Criss-cross lying piled stems, branches and brushwood of spruce, fallen beech stems.
– physico-chemical factors, plant and stone density:
T_{MAX} 16.70°C, T_{MEAN} 12.10°C, F (moisture) 5.30, N (nutrients) 5.73, R (Ca^{++}) 3.12, M 2, PD 700, S 0

No ants! Species richness index S_{100} 0.0 species / 100 m².
Potential nest habitat for ants are found on <1% of area due to strong shading and moist, moldy conditions.

SP 170: Bayerischer Wald, abgestorbener Wald, S.Weber 2.3

Habitat type: dead montane spruce forest with living beech
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Lärchenberg, 48.9472°N, 13.3889°E, 865 m,
Plot size: S-area 108 m²+ 100 m^2 areas without canopy, Q-area 2900 m^2
Orography (slope and orientation of surface): 10° SW
Soil conditions: loam on fixed glacial rubble, bedrock: "alter Finsterauer Kristallgranit"
Comments: By plant sociology a former *Dryopteris dilatata*-fir-beech forest. First attack by spruce bark beetle (*Ips typographicus*) in 1997. Now (2002) a dead, unused spruce stand with 80- to 100-years-old living beech. Masses of spruce stems lying criss-cross.
Vegetation:
– tree layer (cover 25%, mean height 30 m, 303 stemes/ha, partially broken:
Fagus sylvatica
– shrub layer (cover 0.1%, Height bis 3 m):
Picea abies, *Fagus sylvatica*, *Sorbus aucuparia*, *Sambucus nigra*
– herb layer (cover 3%):
Athyrium filix-femina, *Calamagrostis villosa*, *Dryopteris dilatata*, *Fagus sylvatica*, *Galeopsis bifida*, *Hieracium murorum*, *Impatiens noli-tangere*, *Mycelis muralis*, *Oxalis acetosella*, *Picea abies*, *Populus tremula*, *Prenanthes purpurea*, *Rubus fruticosus* agg., *Rubus idaeus*, *Salix caprea*, *Sambucus nigra*, *Senecio fuchsii* (= *ovatus*), *Sorbus aucuparia*, *Taraxacum officinale*, *Vaccinium myrtillus*
– moss and lichen layer (cover 0.05%, 2cm)
– litter layer (cover 15%, 4 cm, spruce needles and much beech leafes)
– dead wood on ground (cover 80%)
Criss-cross lying, piled stems, branches and brushwood of spruce, fallen beech stems.
– physico-chemical factors, plant and stone density:
T_{MAX} 17.00°C, T_{MEAN} 12.16°C, F (moisture) 5.50, N (nutrients) 6.00, R (Ca^{++}) 4.38, M 2, PD 70, S 0.1

No ants! Species richness index S_{100} : 0.0 species / 100 m².

SP 171: Bayerischer Wald, Wirtschaftswald, S.Weber 3.1

Habitat type: working montane spruce forest
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Annathal, 48.8764°N, 13.6264°E, 810 m,
Plot size: S-area 108 m², Q-area 4200 m^2
Orography (slope and orientation of surface): 8° SW
Soil conditions: loam
Comments: By plant sociology a former *Dryopteris dilatata*-fir-beech forest. Currently a spruce-beech forest used by single-tree logging.
Vegetation:
– tree layer (cover 92%, mean height 32 m, mean age 90 years, 250 stems/ ha):
Picea abies, *Fagus sylvatica*
– shrub layer (cover 3%, height 1 to 3 m)
Picea abies, *Fagus sylvatica*
– herb layer (cover 6%):
Anemone nemorosa, *Abies alba*, *Carex leporina*, *Carex pilulifera*, *Dryopteris dilatata*, *Fagus sylvatica*, *Galeopsis bifida*, *Maianthemum bifolium*, *Oxalis acetosella*, *Picea abies*, *Rubus idaeus*, *Senecio fuchsii* (= *ovatus*), *Sorbus aucuparia*, *Vaccinium myrtillus*, *Veronica officinalis*
– moss and lichen layer (cover 1%, 3cm)
– litter layer (cover 70%, 3 cm, spruce needles and beech leafes)
– dead wood on ground (cover 20%)
few lying, more or less rotten stems, piles of branches and brushwood of spruce.
– physico-chemical factors, plant and stone density:
T_{MAX} 13.70°C, T_{MEAN} 11.73°C, F (moisture) 5.22, N (nutrients) 5.40, R (Ca^{++}) 3.12, M 3, PD 400, S 0

Ant species		nests / 100 m²
Myrmica ruginodis	1.	0.03
total		0.03

Species richness index S_{100} 0.03 species / 100 m².
No ant nest found, only a pitfall trapped *Myrmica ruginodis* worker in Q-area

SP 172: Bayerischer Wald, Wirtschaftswald, S.Weber 3.2

Habitat type: working montane spruce forest
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Geissberg, 48.9269°N, 13.3464°E, 750 m,
Plot size: S-area 108 m² + 100 m^2 , Q-area 3200 m^2
Orography (slope and orientation of surface): 3° NE
Soil conditions: very stony, sandy loam
Comments: By plant sociology a former *Dryopteris dilatata*-fir-beech forest. Currently a spruce-beech forest used by single-tree logging.
Vegetation:
– tree layer (cover 90%, mean height 33 m, mean age 90 years, 364 stems / ha):
Picea abies, *Fagus sylvatica*
– shrub layer (cover 0.1%, Height 1-3 m):
Fagus sylvatica, *Picea abies*, a single *Abies alba* and a single *Populus tremula*.
– herb layer (cover 1%):
Anemone nemorosa, *Abies alba*, *Avenella flexuosa*, *Carex pilulifera*, *Dryopteris dilatata*, *Fagus sylvatica*, *Gymnocarpium dryopteris*, *Maianthemum bifolium*, *Oxalis acetosella*, *Picea abies*, *Populus tremula*, *Prenanthes purpurea*, *Rubus idaeus*, *Sorbus aucuparia*, *Vaccinium myrtillus*
– moss and lichen layer (cover 0.2%, 3 cm)
– litter layer (cover 65%, 3.5 cm, largely beech leaves, spruce needles)
– dead wood on ground (cover 35%)
few lying, more or less rotten stems, stumps, piles of branches and brushwood of spruce.
– physico-chemical factors, plant and stone density:
T_{MAX} 13.90°C, T_{MEAN} 12.03°C, F (moisture) 5.38, N (nutrients) 5.11, R (Ca^{++}) 3.14, M 3, PD 30, S 0

Ant species		nests / 100 m²
Myrmica ruginodis	1.	0.93
total		0.93

Species richness index S_{100} 0.93 species / 100 m².

One nest finding of *Myrmica ruginodis* in a rotten, mossy tree stump at a sun-exposed patch at the margin of the wood.

SP 173: Bayerischer Wald, Wirtschaftswald, S.Weber 3.3

Habitat type: working montane spruce forest
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Scheuereck, 49.0597°N, 13.3017°E, 705 m,
Plot size: S-area 108 m², Q-area 3550 m^2
Orography (slope and orientation of surface): 10°W
Soil conditions: loam
Comments: By plant sociology a former *Dryopteris dilatata*-fir-beech forest. Substantially a spruce-beech forest used by single-tree logging.
Vegetation:
– tree layer (cover 80%, mean height 36 m, mean age 110 years, 364 stems/ha):
Picea abies, *Fagus sylvatica*
– shrub layer (cover 0.2%, height 1 to 3 m)
Natural rejuvenation of *Picea abies* and *Fagus*, single *Sorbus aucuparia*
– herb layer (cover 5%):
Abies alba, *Acer pseudoplatanus*, *Athyrium filix-femina*, *Carex pilulifera*, *Dryopteris dilatata*, *Fagus sylvatica*, *Juncus effusus*, *Luzula pilosa*, *Lycopodium annotinum*, *Maianthemum bifolium*, *Oxalis acetosella*, *Picea abies*, *Prenanthes purpurea*, *Rubus fruticosus* agg., *Rubus idaeus*, *Sorbus aucuparia*, *Vaccinium myrtillus*
– moss and lichen layer (cover 1%, 3cm):
– litter layer (cover 45%, 2.5 cm, largely beech leaves, spruce needles)
– dead wood on ground (cover 30%):
Few lying, more or less rotten stems, stumps, piles of branches and brushwood of spruce.
– physico-chemical factors, plant and stone density:
T_{MAX} 13.90°C, T_{MEAN} 12.03°C, F (moisture) 5.38, N (nutrients) 5.11, R (Ca^{++}) 3.14, M 3, PD 30, S 0

Ant species		nests / 100 m²
Myrmica ruginodis	1.	0.93
total		0.93

Species richness index S_{100} 0.93 species / 100 m².
No nests found but density estimated by pitfall traps in Q-area.

SP 174: Bayerischer Wald, Kahlschlag, S.Weber 4.1

Habitat type: succession on a 5-years-old clear cutting of montane spruce forest
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Geiermais, 48.9247°N, 13.5558°E, 845 m,
Plot size: S-area 108 m², Q-area 4750 m^2
Orography (slope and orientation of surface): 4°NE
Soil conditions: loam on fixed glacial rubble, valley fill
Comments: succession dominated by *Rubus idaeus* on a 5-years-old clear cutting of a former spruce-beech-fir forest with few remaining *Fagus sylvatica*. Single granite blocks or stones, sunken into soil and covered by moss and litter. Small earth mounds with flat stones, poorly overgrown by herbs and partially mossy. First attack by spruce bark beetle (*Ips typographicus*) in 1994, complete destruction in 1996, complete clear-cutting in 1997.
Vegetation:
– tree layer (cover 5%, mean height 20 m):
Fagus sylvatica
– shrub layer (cover 10%, mean height 2 m):
Picea abies, *Sorbus aucuparia*
– herb layer (cover 90%):
Abies alba, *Acer pseudoplatanus*, *Athyrium filix-femina*, *Carex pilulifera*, *Dryopteris dilatata*, *Fagus sylvatica*, *Juncus effusus*, *Luzula pilosa*, *Lycopodium annotinum*, *Maianthemum bifolium*, *Oxalis acetosella*, *Picea abies*, *Prenanthes purpurea*, *Rubus fruticosus* agg., *Rubus idaeus*, *Rumex acetosella acetosella*, *Sambucus racemosa*, *Sorbus aucuparia*, *Vaccinium myrtillus*

– moss and lichen layer (cover 4%, 2 cm):
– litter layer (cover 6%, 4.5 cm):
Needle litter 2%, 3cm, shreddered wood 4%, 5 cm)
– dead wood on ground (cover 30%):
many stumps of different stage of decay (634 stumps / ha), few lying, more or less rotten stems and branches, much brushwood.
– physico-chemical factors, plant and stone density:
T_{MAX} 14.70°C, T_{MEAN} 11.75°C, F (moisture) 5.67, N (nutrients) 5.14, R (Ca^{++}) 3.40, M 3, PD 4000, S 1.5

Ant species		nests / 100 m²
Myrmica sulcinodis		7.40
Myrmica ruginodis		4.70
Formica lemani		3.70
Myrmica rubra		0.93
Leptothorax acervorum		0.93
Formica sanguinea		0.93
Lasius platythorax	7.	0.10
total		18.69

Species richness index S_{100} : 5.98 species / 100 m².
Potential nest sites on 10 to 25% of surface (more sun-exposed patches).

SP 175: Bayerischer Wald, Kahlschlag S.Weber 4.1 Offen

Habitat type: succession on a 5-years-old clear cutting of montane spruce forest
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Geiermais, 48.9244°N, 13.5558°E, 845 m
Plot size: S-area 74.5 m^2, addition of six subareas with weak plant cover
Orography (slope and orientation of surface): 4° NE
Soil conditions: loam on fixed glacial rubble, valley fill, topsoil is a partially loose loamy earth with many skeletal elements < 5 cm and few larger stones of 10-40 cm diameter
Comments: succession with poor plant development on a 5-years-old clear cutting of a former spruce-beech-fir forest with sparse herb cover and few remaining *Fagus sylvatica*. First attack by spruce bark beetle (*Ips typographicus*) in 1994, complete destruction in 1996, complete clear-cutting in 1997.
Vegetation:
– herb layer (cover 20%):
Vaccinium myrtillus, *Rubus idaeus*, *Maianthemum bifolium*, *Calamagrostis epigejos*, *Juncus effusus*, *Abies alba*, *Betula pendula*, *Epilobium angustifolium*, *Rumex acetosella*, *Agrostis capillaris*, *Salix caprea*
– moss and lichen layer (cover 32%, 1-2 cm)
Ceratodon pupureus and other species
– litter layer (cover 42%, 0.5-1 cm):
Needle litter and shreddered wood
– dead wood on ground (cover 9%):
many stumps of different stage of decay (634 stumps / ha), roots, branches, brushwood and detached bark pieces.
– physico-chemical factors, plant and stone density:
T_{MAX} 19.70°C, T_{MEAN} 12.93°C, F (moisture) 4.86, N (nutrients) 4.89, R (Ca^{++}) 3.29, M 3, PD 300, S 3.0

Ant species		nests / 100 m²
Myrmica sulcinodis		28.00
Formica lemani		10.70
Formica sanguinea		4.00
Myrmica ruginodis		2.70
Manica rubida		2.70
Leptothorax acervorum		1.30
Camponotus herculeanus		1.30
Myrmica lobicornis	8.	0.10
total		50.80

Species richness index S_{100} 7.42 species / 100 m².

Hypolithic nests were preferently used by *F.lemani*, *F.sanguinea* and *Manica rubida* (as initial nests) whereas the dominant *Myrmica sulcinodis* used nests in an under moss and needle litter (few in dead wood). Observation of dealate gynes of *F.rufa* and *F.sanguinea* in search of a host nest and of those of *Manica rubida*.

SP 176: Bayerischer Wald, Kahlschlag, S.Weber 4.2

Habitat type: succession on a 6-years-old clear cutting of montane spruce forest
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Guglöd, 48.9358°N, 13.4239°E, 825 m
Plot size: S-area 108 m², Q-area 3300 m^2
Orography (slope and orientation of surface): 2° SW
Soil conditions: loam over metatectic cordierite-silimanite-gneiss
Comments: succession dominated by *Rubus idaeus* on a 6-years-old clear cutting of a former spruce-beech-fir forest with few remaining *Fagus sylvatica* of 5-6 m height. Small earth mounds with flat stones, poorly overgrown by herbs and partially mossy. Condensed, moist soil under ruts with mossy or bare surface or partially with *Juncus*. Total attack by spruce bark beetle (*Ips typographicus*) in 1996 and complete clear-cutting in the same year.
Vegetation:
– tree layer (cover 2%, mean height 6 m):
Fagus sylvatica
– shrub layer (cover 3%, mean height 1.5 m):
Sorbus aucuparia, *Picea abies*
– herb layer (cover 80%):
Abies alba, *Acer pseudoplatanus*, *Agrostis capillaris*, *Athyrium filix-femina*, *Betula pendula*, *Calamagrostis epigejos*, *Carex curta*, *Carex echinata*, *Carex leporina*, *Carex pallescens*, *Carex pilulifera*, *Carex remota*, *Dryopteris dilatata*, *Epilobium angustifolium*, *Fagus sylvatica*, *Fragaria vesca*, *Galeopsis bifida*, *Glyceria fluitans*, *Juncus bulbosus*, *Juncus effusus*, *Luzula campestris multiflora*, *Lysimachia nemorum*, *Maianthemum bifolium*, *Moehringia trinervia*, *Oxalis acetosella*, *Picea abies*, *Poa annua*, *Populus tremula*, *Prenanthes purpurea*, *Rubus fruticosus* agg., *Rubus idaeus*, *Rumex acetosa*, *Rumex acetosella acetosella*, *Salix caprea*, *Soldanella montana*, *Sorbus acuparia*, *Taraxacum officinale*, *Vaccinium myrtillus*, *Veronica officinalis*
– moss and lichen layer (cover 3%, 2 cm)
– litter layer (cover 17%, 4 cm):
Needle litter 7% and 3 cm, shreddered wood 10% and 5 cm)
– dead wood on ground (cover 30%):
many stumps of different stage of decay (618 stumps / ha), few lying stems and branches, a lot of twigs, brushwood, shreddered wood and detached bark pieces.
– physico-chemical factors, plant and stone density:
T_{MAX} 15.50°C, T_{MEAN} 12.02°C, F (moisture) 6.07, N (nutrients) 5.03, R (Ca^{++}) 3.71, M 3, PD 2700, S 2.0

Ant species	nests / 100 m²
Myrmica ruginodis	0.93
Camponotus herculeanus	0.93
Formica sanguinea 3.	0.93
total	2.79

Species richness index S_{100} 2.96 species / 100 m².
A large *Formica sanguinea* nest at tree stump with pile of needle litter (host species *F. lemani* not observed). Nests of *M. ruginodis* and *C. herculeanus* in bare, moss-covered soil ramparts caused by skidding works) and in needle litter on these ramparts.

SP 177: Bayerischer Wald, Kahlschlag, S.Weber 4.2 Offen

Habitat type: succession on a 6-years-old clear cutting of montane spruce forest
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Guglöd, 48.9358°N, 13.4239°E, 825 m
Plot size: S-area 150 m^2
Orography (slope and orientation of surface): 2° SW
Soil conditions: loam over metatectic cordierite-silimanite-gneiss

Comments: succession with poor vegetation development on a 6-years-old clear cutting of a former spruce-beech-fir forest with few remaining *Fagus sylvatica* of 5-6 m height. Small earth mounds with flat stones, poorly overgrown by herbs and partially mossy. Condensed, moist soil under ruts with mossy or bare surface or partially with *Juncus*. Total attack by spruce bark beetle (*Ips typographicus*) in 1996 and complete clear-cutting in the same year.
Vegetation:
– tree layer (cover 2%, mean height 6 m):
Fagus sylvatica
– shrub layer (cover 3%, mean height 1.5 m):
Sorbus aucuparia, *Picea abies*
– herb layer (cover 10%):
mostly *Vaccinium myrtillus and Rubus ideaus.*
– moss and lichen layer (cover 15%, 2 cm)
– litter layer (cover 44%, 4 cm):
Needle litter and shreddered wood
– dead wood on ground (cover 30%):
many stumps of different stage of decay (618 stumps / ha), lying branches, brushwood and detached bark pieces.
– physico-chemical factors, plant and stone density:
T_{MAX} 20.80°C, T_{MEAN} 13.26°C, F (moisture) 5.32, N (nutrients) 5.25, R (Ca^{++}) 3.68, M 3, PD 150, S 0.5

Ant species	nests / 100 m²
Myrmica sulcinodis	2.00
Myrmica ruginodis	0.70
Camponotus herculeanus	0.70
Formica lemani 4.	0.70
total	4.10

Species richness index S_{100} 3.71 species / 100 m².
Absence of flat stones on soil surface and moist or variably wet patches with soil compaction decrease the habitat quality. Nests of *M. sulcinodis and C. herculeanus* in bare, moss-covered soil ramparts caused by skidding works) and in needle litter on these ramparts.

SP 178: Bayerischer Wald, Kahlschlag, S.Weber 4.3

Habitat type: succession on a 5-years-old clear cutting of montane spruce forest
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Buchenau, 49.0447°N, 13.3236°E, 925 m,
Plot size: S-area 108 m², 2150 m^2 Q-area
Orography (slope and orientation of surface): 14°SW
Soil conditions: loam
Comments: plant succession on a 5-years-old clear cutting of montane spruce-fir-beech forest
Cler cutting in 1997. Patches with mosses and bare soil and single mossy stone blocks.
Vegetation:
– shrub layer (cover 2%, mean height2 m):
Picea abies
– herb layer (cover 35%):
Abies alba, *Athyrium filix-femina*, *Avenella flexuosa*, *Betula pendula*, *Calamagrostis villosa*, *Carex echinata*, *Carex pilulifera*, *Dryopteris dilatata*, *Epilobium adnatum* (= *tetragonum*), *Epilobium angustifolium*, *Fagus sylvatica*, *Galeopsis bifida*, *Juncus effusus*, *Lycopodium annotinum*, *Maianthemum bifolium*, *Picea abies*, *Prenanthes purpurea*, *Rubus idaeus*, *Sorbus aucuparia*, *Taraxacum officinale*, *Thelypteris phegopteris*, *Vaccinium myrtillus*
– moss and lichen layer (cover 15%, 2 cm)
– litter layer (cover 30%, 3 cm):
leaf and few needle litter
– dead wood on ground (cover 25%):
tree stumps of different stage of decay (381 stumps / ha), few lying stems and branches, in patches much twigs and brushwood.
– physico-chemical factors, plant and stone density:
T_{MAX} 18.60°C, T_{MEAN} 12.15°C, F (moisture) 5.73, N (nutrients) 4.82, R (Ca^{++}) 3.15, M 3, PD 1000, S 0.5

Ant species	nests / 100 m²

Myrmica sulcinodis		1.87
Camponotus herculeanus		0.93
Formica fusca	3.	0.93
total		1.87

Species richness index S_{100} 2.96 species / 100 m².
The less sun-exposed lower slope of the clear-cutting shows a lower ant density and the isolated situation of this rather small area could have retarded the ant succession. *Formica fusca* nest in soil at a stone.

SP 179: Bayerischer Wald, Kahlschlag, S.Weber 4.3Offen

Habitat type: slow succession on a 5-years-old clear cutting of montane spruce forest
Date of investigation: May to September 2002 (Sonja Weber; nest search, grab samples, pitfall trapping)
Situation: Buchenau, 49.0447°N, 13.3236°E, 925 m,
Plot size: S-area 80 m^2 , 2150 m^2 Q-area
Orography (slope and orientation of surface): 14°SW
Soil conditions: loam
Comments: succession on a 5-years-old clear cutting of a former spruce-beech-fir forest. Complete clear-cutting in 1997.
Vegetation:
– shrub layer (cover 2%, mean height2 m):
Picea abies
– herb layer (cover 1%):
mostly different grasses, spruce seedlings and *Vaccinium myrtillus*
– moss and lichen layer (cover 20%, 2 cm)
– litter layer (cover 60%, 1.5 cm):
bare needle litter, in patches with few beech litter
– dead wood on ground (cover 18%):
tree stumps (381 stumps / ha), few lying branches and brushwood
– physico-chemical factors, plant and stone density:
T_{MAX} 21.80°C, T_{MEAN} 12.88°C, F (moisture) 5.23, N (nutrients) 4.82, R (Ca^{++}) 3.15, M 3, PD 55, S 0.5

Ant species		nests / 100 m²
Camponotus herculeanus		7.50
Myrmica sulcinodis		6.25
Manica rubida		1.25
Formica lemani	4.	1.25
total		16.25

Species richness index S_{100} 4.18 species / 100 m².
The less sun-exposed lower slope of the clear-cutting shows a lower ant density and the isolated situation of this rather small area could have retarded the ant succession. *Camponotus herculeanus* nests (both older and initial nests) under stones, under moss or in dead wood. *Myrmica sulcinodis* nests vlargely in moss, partially in needle litter and under stones. One initial nest of *Manica rubida*-Initialnest in loose, mossy earth. One *Formica lemani* nest in soil under litter near to foot of a tree stump. Many walking dealate gynes of von *F. lemani* and *C. herculeanus*.

SP 180: Lichter Kieferndünenwald Milkeler Heide (P14)

Habitat type: light pine forest on a sand dune
Date of investigation: 29 May 2003 (Martz & Seifert)
Situation: Wessel-1.5 km E, 51.3266°N, 14.4663°E, 139 m
Plot size: S-area 36.65 m², Q-area 84.82 m², habitat size: 300 m²
Orography (slope and orientation of surface): 0°
Soil conditions: 5 cm Ah horizon containing many fungal hyphes, slowly rotting (basically mould) over aeolic dune sand.
Comments: the plot is situated in the most sun-exposed part a pine wood on the top of a small dune within a large-area pine forest with a mean canopy cover of 50%. All old pines show more than 15-years-old scars generated by resin tapping. Canopy brightened.
Vegetation:
– tree layer (cover 19%, mean height 20 m, diameter breast height 35 cm):
Pinus silvestris

– shrub layer (cover 6%, mean height 1.2 m):
Pinus silvestris 20, *Betula pendula* 1
– herb layer (cover 31%):
Calluna vulgaris 20, *Avenella flexuosa* 11, *Festuca ovina*-aggr., *Quercus robur*, *Vaccinium vitis-idaea*
– moss and lichen layer (cover 43%, 3 cm)
Pleurozium schreberi, Pohlia nutans, Cetraria islandica, Dicranum scoparium, Hypogymnia physodes, Cladonia arbuscula, Cladonia macilenta, Micaria denigrata
– litter layer (cover 20%, 0.5 cm):
needle litter and pine cones
– dead wood on ground (cover 7%):
Four lying pine stems of 15 cm diameter breast height, branches, twigs
– physico-chemical factors, plant and stone density:
T_{MAX} 24.90°C, T_{MEAN} 16.46°C, F (moisture) 3.75, N (nutrients) 1.88, R (Ca^{++}) 2.40, M 3, PD 420, S 0

Ant species	nests / 100 m²
Temnothorax crassispinus	53.76
Myrmica sabuleti	16.16
Temnothorax unifasciatus	11.95
Lasius platythorax	11.75
Leptothorax muscorum	5.97
Myrmica lobicornis	5.88
Tetramorium caespitum	1.99
Stenamma debile	1.99
Myrmica ruginodis	1.47
Lasius flavus	1.47
Formica fusca	1.18
Formica sanguinea 12.	0.33
total	113.90

Species richness index S_{100} 12.19 species / 100 m².

SP 181: Milkeler Heide P15, Feuchtheide Erica tetralix

Habitat type: moist *Erica* heath on peat bog
Date of investigation: 6 June 2003 (H.Martz)
Situation: Milkel (church)-3.6 km S, 51.3302°N, 14.4515°E, 135 m
Plot size: S-area 81.6 m², habitat size: 1000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: peat bog soil
Comments: in periphery of a bog, adjacent in the east to a pine forest. Strongly dehydrated at the time of investigation.
Vegetation:
– herb layer (cover 88%, mean height 40 cm):
Pinus sylvestris, *Molinia coerulea*, *Erica tetralix*, *Carex* spec., *Juncus* spec., *Drosera rotundifolia*, *Rhynchospora alba*, *Drosera intermedia*, *Eriophorum angustifolium*
– moss and lichen layer (cover 0.5%, mean height 8 cm):
Sphagnum
– litter layer (cover 5%, 0.3 cm):
litter of the herb layer
– dead wood on ground (cover 3%):
on gound: diameter 7 – 10 cm, maximally 20 cm, pine stumps up to 25 cm diamaeter
– physico-chemical factors, plant and stone density:
T_{MAX} 16.30°C, T_{MEAN} 14.43°C, F (moisture) 8.50, N (nutrients) 1.83, R (Ca^{++}) 2.20, M 3, PD 3520, S 0

Ant species	nests / 100 m²
Lasius platythorax	19.61
Myrmica scabrinodis	4.90
Leptothorax acervorum	2.45
Myrmica rubra	1.23
Formica fusca 5.	1.23
total	29.42

Species richness index S_{100} 5.20 species / 100 m².
Habitat structure showed no significant change in 2016.

SP 182: Milkeler Heide P18, Molinia-Bulten im Wasser

Habitat type: very wet stand of purple moor grass *Molinia*
Date of investigation: 6 June 2003 (H. Martz)
Situation: Milkel(church)-3.9 km S, 51.33431°N, 14.45387°E, 136 m
Plot size: S-area 60 m², habitat size: 11000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: wet, periodically inundated part of a fen
Comments: strongly degraded transitional peat bog with strong variations of water level and drainage ditchs. Water level during investigation 50 cm below normal.
Vegetation: (recorded by Schütze)
– herb layer (cover 100%, mean height 35 cm):
Pinus sylvestris, *Alnus glutinosa*, *Betula pendula*, *Molinia caerulea*, *Eriophorum angustifolium*, *Erica tetralix*, *Agrostis canina*, *Lythrum salicaria*, *Drosera rotundifolia*, *Viola palustris*, *Hydrocotyle vulgaris*,
– moss and lichen layer (cover 3%, mean height 7 cm):
Sphagnum denticulatum
– dead wood on ground (cover 1%):
on gound: diameter up to 8 cm, at least temporarily submerged, dead pines and pine stumps up to 18 cm diameter, stumps more abundant
– physico-chemical factors, plant and stone density:
T_{MAX} 17.90°C, T_{MEAN} 14.82°C, F (moisture) 8.50, N (nutrients) 2.14, R (Ca^{++}) 3.33, M 3, PD 3800, S 0

Ant species		nests / 100 m²
Myrmica scabrinodis		13.33
Myrmica rubra		8.33
Lasius platythorax		5.00
Leptothorax acervorum		3.33
Formica fusca	5.	0.83
total		30.82

Species richness index S_{100} 4.44 species / 100 m².
The plot was found strongly affected by scrub encroachment in 2016.

SP 183: Milkeler Heide P 19 - Kiefernforst mit Molinia-Bulten

Habitat type: wet pine forest with purple moor gras
Date of investigation: 20 May 2003 (H. Martz)
Situation: Milkel(church)-4.1 km S, 51.3353°N, 14.4512°E, 137 m
Plot size: S-area 47 m², Q-area 400 m², habitat size: 15000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: mineral soil in transition to a fen, temporarily strongly wet, human-made elevated ridges for the planting of pines.
Comments: poorly growing, planted pine forest with all trees being of the same age
Vegetation: (recorded by Schütze)
– tree layer (cover 55%, mean height 15 m, diameter breast height 18 cm):
Pinus sylvestris
– herb layer (cover 40%, mean height 40 cm):
Molinia caerulea, *Hydrocotyle vulgaris*, *Vaccinium myrtillus*, *Vaccinium vitis-idaea*, *Potentilla* spec., *Sorbus aucuparia*, *Rubus fruticosus* agg., *Prunus padus*/*serotina* and *Quercus robur* in single plants
– moss and lichen layer (cover 10%, mean height 2 cm):
Sphagnum fallax
– litter layer (cover 55%, 2 cm):
pine needles and cones, dead grass
– dead wood on ground (cover 15%):
lying on gound: diameter up to 5 cm, pine stumps of 7 to 20 cm diameter
– physico-chemical factors, plant and stone density:
T_{MAX} 14.60°C, T_{MEAN} 14.04°C, F (moisture) 6.75, N (nutrients) 2.25, R (Ca^{++}) 2.40, M 3, PD 832, S 0

Ant species		nests / 100 m²
Myrmica ruginodis		4.26
Myrmica rubra	2.	2.13
total		6.39

Species richness index S_{100} 2.35 species / 100 m².

Nests only at the southern side of the ripples in grass tussocks but not under bark of dead or living pine wood.

SP 184: Milkeler Heide P 20 - Dünenkiefernwald "jung"

Habitat type: poor mossy pine forest on a dune
Date of investigation: 1 June 2003 (H. Martz)
Situation: 2 km E Hermsdorf-Kreuzung, 51.3273°N, 14.4349°E, 138 m
Plot size: S-area 47 m², Q-area 230 m², habitat size: m²
Orography (slope and orientation of surface): 3°SW
Soil conditions:
Comments: poor mossy pine forest (Hagermoos-Kiefernforst) in a depression between two dunes, old shooter troughs from military training
Vegetation: (recorded by Schütze)
– tree layer (cover 55%, mean height 14 m, 16 cm diameter breast height):
Pinus sylvestris
– herb layer (cover 0.5%, mean height 6 cm):
Pinus sylvestris saplings, *Quercus robur* saplings, *Avenella flexuosa*, 1 dead *Calluna vulgaris*, *Vaccinium myrtillus*
– moss and lichen layer (cover 85%, mean height 1.5 cm):
Pohlia nutans, *Pleurozium schreberi*, *Hypnum jutlandicum*
– litter layer (cover 55%, 2 cm):
pine needles, cones and bark pieces
– dead wood on ground (cover 12%):
dead wood lyingon gound: diameter up to 5 cm; one dead standing pine of 7 cm diameter breast height (DBH, German: BHD)
– physico-chemical factors, plant and stone density:
T_{MAX} 20.70°C, T_{MEAN} 15.58°C, F (moisture) 3.33, N (nutrients) 2.33, R (Ca^{++}) 1.83, M 3, PD 130, S 0

Ant species		nests / 100 m²
Temnothorax crassispinus		44.68
Myrmica rubra	2.	2.13
total		46.81

Species richness index S_{100} 2.35 species / 100 m².

SP 185: Erlenbruch P 21 - Milkeler Heide / Haikbruch

Habitat type: wet old alder carr
Date of investigation: 7 June 2003
Situation: 1 km E Hermsdorf (road crossing), 51.3275°N, 14.4228°E, 134 m
Plot size: S-area 457 m², habitat size: 8000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: unknown, probably gley
Comments: the plot was partially inundated. Collecting was restricted to elevated patches and tree trunk bases.
Vegetation: (recorded by Schütze)
– tree layer (cover 80%, mean height 22 m, diameter breast height 40 cm):
Alnus glutinosa
– **shrub layer** (cover 3%, mean height 1.60 m):
Fraxinus excelsior, *Frangula alnus*
– herb layer (cover 70%, mean height 70 cm):
Phragmites australis, *Rubus idaeus*, *Oxalis acetosella*, *Viola palustris*, *Polygonum hydropiper*, *Galium aparine*?, *Scutellaria galericulata*, *Alnus glutinosa*, *Equisetum sylvaticum*, *Impatiens noli-tangere*, *Urtica dioica*, *Lycopus europaeus*, *Carex elongata*, *Athyrium filix-femina*, *Deschampsia caespitosa*, *Calamagrostis canescens*, *Peucedanum palustre*, *Thelypteris palustris*, *Dryopteris carthusiana*, *Humulus lupulus*, *Cirsium palustre*
– moss and lichen layer (cover 1%, mean height 1 cm):
– litter layer (cover 25%, 1 cm leaf litter):
– dead wood on ground (cover 1%, diameter up to 20 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 14.70°C, T_{MEAN} 14.09°C, F (moisture) 7.94, N (nutrients) 5.61, R (Ca^{++}) 5.21, M 3, PD 4900, S 0

Ant species	nests / 100 m²

Myrmica rubra		1.53
Myrmica ruginodis	2.	0.22
total		1.75

Species richness index S_{100} 1.54 species / 100 m².

SP 186: P 22 Driewitzer Heide, Kiefern-Blaubeer-Forst

Habitat type: blueberry pine forest
Date of investigation: 30 June 2003 (H. Martz)
Situation: Hermsdorf(Kreuzung)-2.5 km NE, 51.3408°N, 14.4342°E, 136 m
Plot size: S-area 42 m²
Orography (slope and orientation of surface): 2°W
Soil conditions: unknown, probably podsol
Comments: surface strongly structured through burrowing activity by *Sus scrofa*
Vegetation:
– tree layer (cover 40%, mean height 17 m, diameter breast height 22 cm):
Pinus sylvestris
– shrub layer (cover 5%, mean height 1.80 m):
Pinus sylvestris
– herb layer (cover 42%, mean height 18 cm):
Vaccinium myrtillus, *Vaccinium vitis-idaea*, *Pinus sylvestris*, *Calluna vulgaris*, *Quercus robur*, *Avenella flexuosa*, *Molinia caerulea*, *Carex* spec., *Alnus glutinosa*, *Betula pendula*, *Prunus padus/serotina*
– moss and lichen layer (cover 70%, mean height 2 cm):
Pohlia nutans, *Dicranum scoparium*, *Hypnum cupressiforme*, *Pleurozium schreberi*
– litter layer (cover 15%, 0.5 cm):
needles, cones, small twigs
– dead wood on ground (cover 1%, diameter up to 8 cm, stumps)
– physico-chemical factors, plant and stone density:
T_{MAX} 18.20°C, T_{MEAN} 14.90°C, F (moisture) 5.14, N (nutrients) 2.20, R (Ca^{++}) 2.78, M 3, PD 896, S 0

Ant species		nests / 100 m²
Temnothorax crassispinus		42.86
Myrmica rubra		14.29.
Myrmica ruginodis		9.52
Stenamma debile		4.76
Lasius platythorax		4.76
Myrmica sabuleti	6.	2.38
total		78.57

Species richness index S_{100} 7.22 species / 100 m².

SP 187: P 23 Driewitzer Heide, Kiefernwald mit Fichtennaturverjüngung

Habitat type: pine-spruce forest
Date of investigation: 31 May 2003 (H.Martz)
Situation: Hermsdorf(Kreuzung)-2.8 km NE, 51.3432°N, 14.4374°E, 135 m
Plot size: S-area 46 m², Q-area 800 m²
Orography (slope and orientation of surface): 5°NW
Soil conditions: at least 25 cm Ah horizon, then first sandy material beginning, probably a podsol
Comments: the plot is heterogenous; more sunny and mossy patches change with shady and moss-poor patches at patches with spruce understory.
Vegetation: (recorded by Schütze)
– tree layer (cover 60%, mean height 20 m):
2 *Picea abies* (24 cm diameter breast height [DBH])**,** 3 *Pinus sylvestris* (DBH 38cm)
– shrub layer (cover 35%, mean height 3 m):
5 *Picea abies*, 10 *Pinus sylvestris*
– herb layer (cover 5%, mean height 5 cm):
10 *Picea abies*, *Quercus robur*, *Avenella flexuosa*, *Molinia caerulea*, *Calluna vulgaris*, *Carex* spec., *Vaccinium myrtillus*, *Sorbus aucuparia*, *Pteridium aquilinum*
– mosses and lichens (cover 65%, mean height 1 cm):
Pohlia nutans, *Ptilidium ciliare*, *Dicranella heteromalla*, *Pleurozium schreberi*, *Leucobryum glaucum*, *Polytrichum formosum*, *Dicranum scoparium*, *Hypnum cupressiforme*
– litter layer (cover 50%, 4 cm):

needles, cones and bark of pines
– dead wood on ground (cover 7%, diameter up to 25 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 15.70°C, T_{MEAN} 14.31°C, F (moisture) 5.00, N (nutrients) 2.40, R (Ca^{++}) 2.38, M 3, PD 100, S 0

Ant species	nests / 100 m²
Temnothorax crassispinus	65.67
Myrmica ruginodis	16.11
Myrmica rubra	8.95
Lasius platythorax	5.37
Leptothorax muscorum	1.88
Harpagoxenus sublaevis	1.88
Formica sanguinea 7.	0.12
total	99.98

Species richness index S_{100} 7.01 species / 100 m².

SP 188: Erlenbruch jung P 25 Milkeler Heide / Strowenzbruch

Habitat type: young alder carr
Date of investigation: 24 May 2003, 15 July 2003 (Seifert & Martz)
Situation: Hermsdorf-Kreuzung SSE 0.9 km, 51.3189°N, 14.4139°E, 135 m
Plot size: S-area 89 m², habitat size: 1.9 ha
Orography (slope and orientation of surface): 0°
Soil conditions:
Comments: relatively young alder carr with Elongated Sedge (Walzenseggen-Erlenbruchwald)
Vegetation: (recorded by Schütze)
– tree layer (cover 67%, mean height 14 m):
47 *Alnus glutinosa*, < 1 *Betula pendula*
– shrub layer (cover 20%, mean height 2.0 m):
Rubus idaeus, *Alnus glutinosa*, *Betula pendula*, *Sorbus aucuparia*, *Frangula alnus*
– herb layer (cover 70%, mean height 60 cm):
Frangula alnus, *Rubus idaeus*, *Oxalis acetosella*, *Agrostis stolonifera*, *Calamagrostis canescens*, *Dryopteris cathusiana*, *Quercus robur*, *Alnus glutinosa*, *Rubus fruticosus* cf., *Molinia caerulea*, *Phragmites australis*, *Impatiens parviflora*, *Avenella flexuosa*, *Carex elongata*, *Galeopsis* spec.
– mosses and lichens (cover 2%, mean height 1 cm):
Sphagnum fimbriatum, *Mnium hornum*
– litter layer (cover 80%, 3 cm):
leaf litter
– dead wood on ground (cover 40%):
one ground: diameter up to 5 cm, standing: 5-30 cm, mainly stumps
– physico-chemical factors, plant and stone density:
T_{MAX} 15.70°C, T_{MEAN} 14.31°C, F (moisture) 7.17, N (nutrients) 5.00, R (Ca^{++}) 4.27, M 3, PD 5000, S 0

Ant species	nests / 100 m²
Lasius platythorax	12.36
Myrmica ruginodis	5.62
Myrmica rubra 3.	3.37
total	21.35

Species richness index S_{100} 3.07 species / 100 m².

SP 189: P 94, Initialmoor bei Oppitz mit Drosera

Habitat type: initial bog on the ground of a former pond
Date of investigation: 7 June 2003 H.Martz, 15 July 2003 Seifert & Martz
Situation: Oppitz(Kreuzung)-0.9 km SSE, 51.2960°N/ 14.4230°E, 142 m
Plot size: S-area 59 m², Q-area 82 m², habitat size: 8800 m²
Orography (slope and orientation of surface): 0°
Soil conditions: former pond floor of the Eichteich
Comments: bog development on the former pond floor of the Eichteich. During the time of investigation strongly visited by Boar and Red Dear and affected by hunters (baiting site) .
Vegetation: Aufnahme 192 (Schütze)
– herb layer (cover 70%, mean height 40 cm):

12 *Pinus sylvestris*, *Eriophorum angustifolium*, *Lysimachia vulgaris*, *Carex* spec., *Agrostis canina*, *Viola palustris*, *Drosera rotundifolia*, *Drosera intermedia*, *Hydrocotyle vulgaris*, *Rhynchospora alba*, *Molinia coerulea*, *Betula pubescens*
– mosses and lichens (cover 25%, mean height 7 cm):
Sphagnum denticulatum, *Drepanocladus aduncus*, *Calliergon stramineum*
– dead wood on ground (cover 0.1%):
pine stumps of 7 cm diameter
– physico-chemical factors, plant and stone density:
T_{MAX} 20.60°C, T_{MEAN} 15.46°C, F (moisture) 8.50, N (nutrients) 2.22, R (Ca^{++}) 3.00, M 4, PD 2800, S 0

Ant species		nests / 100 m²
Myrmica scabrinodis		14.80
Lasius platythorax		9.90
Myrmica rubra	3.	3.80
total		28.50

Species richness index S_{100} 3.70 species / 100 m².

SP 190: S 1 Driewitzer Heide / Wiese mit Juncus
Habitat type: moist meadow
Date of investigation: 25 May 2003 H.Martz
Situation: Hermsdorf(road crossing)-3.1 km NE, 51.3467°N, 14.4386°E, 134 m
Plot size: S-area 38.8+13.2 = 52 m², habitat size: 2.0 ha
Orography (slope and orientation of surface): 0°
Soil conditions: 25 cm of black, humous and loamy soil over sand
Comments: moist, rush-rich *Holcus lanatus* meadow in a woodland clearing
Vegetation: (recorded by Schütze)
– herb layer (cover 90%, seasonal mean of height 30 cm):
Alopecurus pratensis, *Juncus acutiflorus*, *Holcus lanatus*, *Poa pratensis*, *Agrostis capillaris*, *Luzula* spec., *Carex ovalis*, *Carex nigra*, *Galium palustre*, *Cirsium palustre*, *Viola* spec., *Ranunculus repens*, *Phragmites australis*, *Stachys palustris*, *Lychnis flos-cuculi*, *Lotus uliginosus*, *Achillea millefolium*
– physico-chemical factors, plant and stone density:
T_{MAX} 16.20°C, T_{MEAN} 14.43°C, F (moisture) 7.00, N (nutrients) 4.17, R (Ca^{++}) 4.38, M 4, PD 2700, S 0

Ant species		nests / 100 m²
Myrmica rubra	1.	11.54
total		11.54

Species richness index S_{100} 1.00 species / 100 m².

SP 191: S 2 - Jesor-Wiese
Habitat type: wet fen meadow
Date of investigation: 24 May 2003 H.Martz, 15 July 2003 Seifert & H. Martz
Situation: Hermsdorf(Kreuzung)-1.8 km SW, 51.3167°N, 14.3868°E, 139 m
Plot size: S-area 48 m², Q-area 80.84 m², habitat size: 7.6 ha
Orography (slope and orientation of surface): 0°
Soil conditions: boggy, of unknown genesis
Comments: situated in a flat depression, perhaps influenced by water influx from the adjacent pond.
Vegetation: (recorded by Schütze)
– herb layer (cover 90%, mean height 40 cm):
Eriophorum angustifolium, *Carex vesicaria*, *Phragmites australis*, *Viola palustris*, *Salix* spec. 2 species, *Galium palustre, Lysimachia thyrsiflora, Lysimachia vulgaris, Peucedanum palustre, Bidens frondosa, Lycopus europaeus*, *Epilobium palustre*, *Comarum palustre*, *Ranunculus* spec., *Hydrocotyle vulgaris*, *Drosera rotundifolia*, *Calamagrostis canescens*
– mosses and lichens (cover 55%, mean height 15 cm):
Sphagnum fallax, *Polytrichum* spec.
– dead wood on ground (cover 0.2%):
few stumps of up to 4 cm diameter.
– physico-chemical factors, plant and stone density:
T_{MAX} 16.20°C, T_{MEAN} 14.43°C, F (moisture) 7.00, N (nutrients) 4.17, R (Ca^{++}) 4.38, M 4, PD 2700, S 0

Ant species	nests / 100 m²

Lasius platythorax		11.84
Myrmica rubra		11.13
Myrmica ruginodis		6.19
Myrmica scabrinodis		6.19
Formica fusca	5.	1.24
total		39.59

Species richness index S_{100} 4.95 species / 100 m².

SP 192: Teichdamm mit Alteichen Kreba

Habitat type: old oak stand on a dam with a driveway
Date of investigation: 21 July 2003 (Seifert & Martz)
Situation: Kreba(church)-0.9 km NNW, 51.3512°N, 14.6771°E, 139 m
Plot size: S-area 30.85 m², Q-area 120 m², habitat size: 2000 m²
Orography (slope and orientation of surface): average 0° (either 20°W or 20°E)
Soil conditions: elevated bed of driveway and dam of sand and rubble.
Comments: the plot consists of both 2.1-meters wide slopes of a pond damm with a 2.8-meters wide, frequently used driveway with cover of fine rubble.
Vegetation:
– tree layer (cover 70%, mean height 22 m, diameter breast height 70, 105 and 122 cm, according to growth ring counts on stumps, the oldest trees are 200 years old):
Quercus robur
– shrub layer (cover 7%, mean height 2 m):
Robina pseudacacia
– herb layer (cover 74%):
Festuca rubra, *Equisetum arvense*, *Chenopodium album*, *Poa nemoralis*, *Hedera helix*, *Silene latifolia*, *Cerastium holosteoides*, *Phragmites communis*, *Prunus serotina*, *Urtica dioica*, *Lolium perenne*, *Oxalis fontana*, *Pimpinella saxifraga*, *Galium album*, *Convolvulus arvensis*, *Lysimachia numularia*, *Mycelis muralis*, *Hieracium sabaudum*, *Asparagus officinalis*, *Bromus tectorum*, *Calamagrostis canescens*, *Deschampsia flexuosa*, *Polygonum aviculare*, *Achillea millefolium*, *Linaria vulgaris*, *Glechoma hederacea*, *Humulus lupulus*, *Taraxacum officinale*, *Plantago major*, *Plantago media*
– moss and lichen layer (cover 0.1%, 1.5 cm)
Plagionium affine, *Brachythecium rutabulum*
– litter layer (cover 18%, 1 cm):
leaf litter and acorns
– dead wood on ground (cover 0.3%):
few branches and twigs
– physico-chemical factors, plant and stone density:
T_{MAX} 20.70°C, T_{MEAN} 15.48°C, F (moisture) 5.07, N (nutrients) 5.36, R (Ca^{++}) 5.50, M 4, PD 740, S 0

Ant species		nests / 100 m²
Temnothorax crassispinus		178.30
Leptothorax gredleri		45.39
Myrmica rugulosa		42.14
Lasius platythorax		22.69
Lasius flavus		12.97
Lasius brunneus		9.73
Formica fusca		9.73
Temnothorax corticalis		6.48
Leptothorax acervorum		3.24
Dolichoderus quadripunctatus		3.24
Myrmica rubra		1.62
Camponotus fallax	12.	0.81
total		336.34

Species richness index S_{100} : 12.25 species / 100 m².
35% of the *gredleri* and 95% of *crassispinus* nests were found on soil surface but 65% of the *gredleri* and only 5% of the *crassispinus* nests 15-70 cm high in the bark of oaks. It is a constant feature that *gredleri* is displaced from the soil surface when the density of *crassispinus* is very high. One *T. corticalis* nest below unter 1 m height in oak bark. *Dolichoderus* was walking on soil surface. *Temnothorax unifasciatus* 1 gyne.

SP 193: Xerothermer Eichenwald Tharandt

Habitat type: xerothermous oak forest
Date of investigation: 22 July 2003 (H. Martz & B. Seifert)
Situation: Tharandt-Bhf-0.9 km E, 50.98445°N, 13.6042°E, 293 m
Plot size: S-area 32.26 m², Q-area 110 m², habitat size: 2000 m²
Orography (slope and orientation of surface): 36° S
Soil conditions: para-brown earth with 8 cm Ah over two-mica gneiss/ finegrained metagreywacke
Vegetation:
– tree layer (cover 70%, mean height 15 m, 5 stems/ 100 m² of 13, 13, 13, 20 and 40 cm diameter breast height):
Quercus petraea
– herb layer (cover 30%):
Avenella flexuosa, *Calluna vulgaris*, *Festuca ovina*-group, *Luzula luzuloides*, *Genista tinctoria*, *Vaccinium myrtillus*, *Hieracium sabaudum*, *Quercus petraea*, *Fagus sylvatica*
– moss and lichen layer (cover 28%, 0.5 cm)
Pohlia nutans, *Hypnum cupressiforme*, *Dicranoweisia cirrata*, *Herzogiella* (= *Sharpiella*?) *seligeri*, *Cladonia caespititia*, *Cladonia fimbriata*, *Cladionia coniocraea*, *Parmelia saxatilis*, *Xanthoparmelia conspersda*, *Trapelia granulosa*, *Omphalina umbellifera*
– litter layer (cover 26%, 1 cm):
leaf litter and acorns
– dead wood on ground (cover 2.5%):
one lying stem, branches and twigs.
– physico-chemical factors, plant and stone density:
T_{MAX} 20.60°C, T_{MEAN} 14.68°C, F (moisture) 4.17, N (nutrients) 2.50, R (Ca^{++}) 3.33, M 3, PD 380, S 3.5

Ant species	nests / 100 m²
Temnothorax parvulus	139.32
Temnothorax crassispinus	83.87
Myrmica lonae	17.96
Stenamma debile	3.10
Formica fusca	2.00
Lasius emarginatus	2.00
Myrmica lobicornis	1.87
Myrmica ruginodis	1.87
Lasius alienus	1.00
Tetramorium impurum	1.00
Formica sanguinea 11.	0.91
total	254.9

Species richness index S_{100} 10.55 species / 100 m².
T. parvulus with a lot of seasonal nest splittings (queenless nests).

SP 194: Xerothermer Eichenwald Scharfenstein

Habitat type: xerothermous oak forest
Date of investigation: 13 August 2003 (Seifert & Martz)
Situation: Scharfenstein-1.5 km S, 50.6919°N, 13.0578°E, 400 m
Plot size: S-area 49.86 m², Q-area 170 m², habitat size: 8200 m²
Orography (slope and orientation of surface): 32°S
Soil conditions: humus-rich ranker with 20 cm Ah horizon over Lower Cambrian mica slate. Rock exposed on 2% of surface.
Comments: situated over a steep scarp north of a motorway. During investigation extremely dry after a 4-months drought.
Vegetation:
– tree layer (cover 75%, mean height 15 m, diameter breast height 20-35 cm):
Quercus robur
– shrub layer (1%, mean height1.5 m):
Frangula alnus
– herb layer (cover 62%):
Convallaria majalis, *Avenella flexuosa*, *Luzula luzuloides*, *Vaccinium myrtillus*, *Hieracium sabaudum*, *Calamagrostis arundinacea*, *Sorbus aucuparia*, *Fagus sylvatica*, *Acer pseudoplatanus*, *Quercus robur*, *Corylus avellana*, *Picea abies*
– moss and lichen layer (cover 0.7%, 2 cm)

Pohlia nutans, *Dicranum scoparium*, *Ceratodon purpureus*, *Lepraria incana*, *Cladonia digitata*, *Cladonia polydactyla*
– litter layer (cover 36%, 2 cm):
leaf litter
– dead wood on ground (cover 1.7%):
branches and twigs
– physico-chemical factors, plant and stone density:
T_{MAX} 19.70°C, T_{MEAN} 14.00°C, F (moisture) 4.30, N (nutrients) 3.56, R (Ca^{++}) 2.91, M 3, PD 950, S 0.05

Ant species	nests / 100 m²
Temnothorax nylanderi	52.35
Myrmica ruginodis	12.26
Lasius platythorax	7.35
Stenamma debile	2.01
Leptothorax muscorum	1.81
Formica fusca	1.23
Formica sanguinea	1.23
Camponotus ligniperda	1.18
Lasius fuliginosus 9.	1.18
total	80.60

Species richness index S_{100} nach Seifert 9.28 species / 100 m².

SP 195: Xerothermer Eichenwald Rochsburg
Habitat type: xerothermous oak forest
Date of investigation: 14 August 2003 (Seifert & Martz)
Situation: Rochsburg (railway station)-0.6km SW, 50.9431°N,12.7535°E, 250 m
Plot size: S-area 43.57 m², Q-area 90 m², habitat size: 11280 m²
Orography (slope and orientation of surface): 35°SSE
Soil conditions: ranker with 12 cm Ah horizon over granulite
Comments: the plot is situated above a steep, S-facing scarp that borders a railway line. During investigation dust-dry after an extreme 4-months drought. *Atypus:* 9 tubes on 16 m², *Cicadetta montana*.
Vegetation:
– tree layer (cover 60%, mean height 15 m, diameter breast height 10-55 cm):
Quercus petraea
– shrub layer (cover 3%, mean height 1.5 m):
Quercus petraea
– herb layer (cover 50%):
Luzula luzuloides, *Calamagrostis arundinacea*, *Convallaria majalis*, *Silene nutans*, *Melampyrum pratense*, *Solidago virgaurea*, *Calluna vulgaris*, *Hieracium sabaudum*, *Hieracium pilosella*, *Festuca ovina*-group, *Avenella flexuosa*
– moss and lichen layer (cover 14%, 3 cm)
Atrichum undulatum, *Pohlia nutans*, *Dicranella heteromalla*, *Hypnum cupressiforme*, *Diphyscium foliosum*, *Cladonia caespiticia*
– litter layer (cover 55%, 10 cm):
leaf litter
– dead wood on ground (cover 1.8%):
one lying stem, few branches and twigs.
– physico-chemical factors, plant and stone density:
T_{MAX} 23.10°C, T_{MEAN} 15.43°C, F (moisture) 4.00, N (nutrients) 3.20, R (Ca^{++}) 3.43, M 3, PD 1000, S 3.0

Ant species	nests / 100 m²
Temnothorax nylanderi	89.76
Tetramorium impurum	18.37
Temnothorax unifasciatus	15.82
Myrmica ruginodis	10.99
Myrmecina graminicola	6.89
Myrmica lonae	5.08
Lasius emarginatus	4.35
Myrmica sabuleti	4.02
Dolichoderus quadripunctatus	2.30

Solenopsis fugax	2.30
Myrmica rubra	1.65
Lasius platythorax	1.45
Formica fusca	1.45
Formica sanguinea	1.45
Camponotus ligniperda 15.	1.11
total	166.99

Species richness index S_{100} 16.00 species / 100 m².

SP 196: Lichter Kiefernwald Wittersroda

Habitat type: pine forest on limestone
Date of investigation: 15 /16 August 2003 (Seifert & Martz)
Situation: Wittersroda-0.9 km W, 50.81651°N, 11.39865°E, 360 m
Plot size: S-area 37 m², Q-area 110 m², habitat size: 4000 m²
Orography (slope and orientation of surface): 22°S
Soil conditions: protorendzina with 2-3 cm Ah horizon over 5 cm gritty lime over limestone.
Comments: transition zone from xerothermous grassland to pine forest. Saplings of broad-leafed trees in the herb layer (*Fagus* in particular). At the time of investigation extremely dry after a 4-months drought. *Myrmica* and *Lasius* nests retired deeply in the soil. 2-3 workers at the same spot were considered as a nest finding. Baiting was also used.
Vegetation:
– tree layer (cover 50%, mean height 10 m, 8-30 cm diameter breast height):
Pinus sylvestris
– shrub layer (cover 5%, mean height 1.5 m):
Juniperus communis, *Rhamnus cathartica*, *Viburnum lantana*, *Cornus sanguinea*
– herb layer (cover 83%):
Knautia arvensis, *Sesleria albicans*, *Carlina vulgaris*, *Carlina acaulis*, *Cirsium acaule*, *Anthericium ramosum*, *Cornus sanguinea*, *Rhamnus cathartica*, *Fagus sylvatica*, *Betula pendula*, *Euphorbia cyparissias*, *Acer platanoides*, *Acer campestre*, *Aster amellus*, *Viburnum lantana*, *Teucrium chamaedrys*, *Teucrium montanum*, *Sanguisorba minor*, *Quercus petraea*, *Ononis spinosa*, *Carex humilis*, *Cynanchum vincetoxicum*, *Hieracium laevigatum*, *Bupleurum falcatum*, *Asperula cynanchica*, *Pimpinella saxifraga*, *Lotus corniculatus*, *Helianthemum canum*
– moss and lichen layer (cover 24%, 4 cm)
Rhytidium rugosum, *Cladonia furcata*
– litter layer (cover 10%, 0.5 cm):
little needle litter, pine cones
– dead wood on ground (cover 1.2%):
few rotten branches
– physico-chemical factors, plant and stone density:
T_{MAX} 20.00°C, T_{MEAN} 14.15°C, F (moisture) 3.60, N (nutrients) 2.86, R (Ca^{++}) 7.41, M 3, PD 1200, S 0.05

Ant species	nests / 100 m²
Temnothorax nylanderi	57.41
Lasius alienus	50.57
Leptothorax muscorum	33.49
Myrmica lonae	16.18
Lasius flavus	8.20
Myrmica schencki	7.26
Myrmica sabuleti	6.60
Formica fusca	5.00
Myrmica ruginodis	3.30
Ponera coarctata	2.73
Leptothorax acervorum	2.39
Temnothorax tuberum	2.39
Myrmica lobicornis	1.65
Camponotus ligniperda 14.	0.90
total	198.07

Species richness index S_{100} 14.31 species / 100 m².
According to an aerial photo, no significant change in gross habitat structure in 2015.

SP 197: Krebaer Heide Waldmoor Ost, MO4d

Habitat type: peat bog
Date of investigation: 2001 (W.Münch), 9 September 2003 (Martz and Seifert)
Situation: Neuliebel-1.8 km SSE, 51.37395°N, 14.74099°E, 144 m
Plot size: S-area 70.6 m², habitat size: 300 m²
Orography (slope and orientation of surface): 0°
Soil conditions: peat bog soil
Comments: the plot was situated at the southern margin of the bog and was in semi-shade throughout the day caused by a stand of old pines with 50% canopy cover. 70% of the area are usually a very wet *Sphagnum* stand but were extremely dry in 2003 after a 4-months drought.
Vegetation:
– shrub layer (cover 5%, Height 1-4 m):
Pinus sylvestris (dom.), *Ledum palustre*, *Betula pendula*
– herb layer (cover 25%):
Molinia coerulea, *Vaccinium uliginosum*, *Vaccinium oxycoccus*, *Vaccinium myrtillus*, *Calluna vulgaris*, *Eriophorum angustifolium*, *Viola palustris*, *Carex rostrata*, *Ledum palustre*, *Drosera rotundifolia*, *Potentilla erecta*, *Pinus sylvestris*, *Rhamnus frangula*
– moss and lichen layer (cover 85%, 5 cm)
Sphagnum spec., *Polytrichum* spec.
– litter layer (cover 2%, 0.5 cm):
traces of leaf litter
– dead wood on ground (cover 3%):
3 standing and one lying pine stem of 15-25 cm diameter, one stump, lying dead wood under normal conditions fully submerged
– physico-chemical factors, plant and stone density:
T_{MAX} 22.90°C, T_{MEAN} 15.94°C, F (moisture) 8.62, N (nutrients) 2.40, R (Ca^{++}) 2.12, M 3, PD 1100, S 0

Ant species	nests / 100 m²
Lasius platythorax	9.92
Myrmica ruginodis	4.24
Myrmica scabrinodis	4.24
Temnothorax crassispinus	1.42
Leptothorax muscorum	1.42
Tapinoma subboreale 6.	0.30
total	21.24

Species richness index S_{100} 5.36 species / 100 m².
T. subboreale was found in a single worker only in 2001

SP 198: "Ameisenstadt" auf Magerrasen im NSG "Dellenhäule"

Habitat type: old sheep pasture on oligotrophic grassland
Date of investigation: 20-21 May 2006
Situation: Waldhausen(church)-2.93 km ESE, 48.816°N, 10.241°E, 582 m
Plot size: S-area 118 m², Q-area 146 m², habitat size: 2 ha
Orography (slope and orientation of surface): 6°SE
Soil conditions: Cover of decalcified, acidic loam over Lower Jurassic limestone.
Comments: Very old sheep pasture since at least 1830 (probably longer) without paddock husbandry until about the year 2000. Situated in a depression with a high incidence of frost [for comparison: Neresheim, 8 km ESE of the plot, at 552 m, had 142.4 days with ground frost in 1995-2004]. Frosts in June and September are not rare on the plot. Growth period only 5 months, annual precipitation <700 mm. During the last years, the plot suffered from intensive paddocking of sheep and goats by the end of May until August with nocturnal stay in a pen. This caused a strong reduction of mean phytodensity (PD decreases from 1200 before to 300 by the end of pasturing), damage of the ant hills and decline of *L.flavus*. 50% of the *Lasius flavus* mounds were weakly populated in 2006. A surveying of mounds by Robert Saur on an area of 625 m² in April-July 2005 resulted in the following data: 69.9 mounds /100 m², mean diameter, height, ground area and above-ground volume D = 52.7 cm, H = 23.0 cm, A = 23.4 dm² and V = 46.8 dm³. 16.4% of ground surface were covered by ant mounds. An extrapolation for an area of 1 ha estimated 327 m³ mound volume and 184 t above-ground dry weight. Applying the regression function of worker population against above-ground mound volume of Nielsen et al. (1976) on the 437 ant mounds measured by Saur results in 201.2 million workers / ha and using the regression function of worker population against basal nest diameter of Holec & Frouz

(2005) results in 107.8 million workers / ha. For a mean worker fresh weight of 0.94 mg this corresponds to 18.9 g /m² following the Nielsen et al. function or 10.1 g / m² following the Holec & Frouz function. Using the mean from both functions of 14.5 g /m² and considering that the population was already affected in 2005, it is no overestimation for the *Lasius flavus* population here that it should have had > 16 g / m² during its best times.
Vegetation:
– shrub layer (cover 0.5%, mean height 1.5 m):
1 shrub of *Juniperus communis*
– herb layer (cover 99%):
Achillea millefolium, Anthoxanthum odoratum, Calluna vulgaris (on the ant mounds)*, Campanula rotundifolia, Carex* (on the ant mounds, *flacca* and *montana*)*, Cerastium arvense, Cirsium palustre, Cirsium eriophorum, Dianthus deltoides, Euphorbia cyparissias, Festuca ovina aggr., Galium verum, Galium mollugo, Genista sagittalis, Helictotrichon pratense, Helictotrichon pubescens, Hieracium pilosella* (on the ant mounds)*, Lathyrus linifolius, Luzula campestris, Polygala vulgaris, Plantago lanceolata, Potentilla erecta, Potentilla tabernaemontani, Ranunculus acris, Rumex acetosa, Rumex acetosella* (on the ant mounds), *Veronica chamaedrys, Veronica teucrium, Viola canina, Taraxacum officinale, Trifolium pratense, Thymus pulegioides* (on the ant mounds).
– moss and lichen layer (cover 8%, 2 cm)
almost restricted to the *Lasius* mounds, there covering 50% of surface, preferentially at the northern side: *Dicranum scoparium*, *Hylocomium splendens*, *Ceratodon purpureus*, *Cladonia fimbriata*, *Cladonia subulata*
– physico-chemical factors, plant and stone density:
T_{MAX} 21.70°C, T_{MEAN} 14.75°C, F (moisture) 4.06, N (nutrients) 2.71, R (Ca^{++}) 4.64, M 5, PD 750, S 0

Ant species	nests / 100 m²
Lasius flavus	70.34
Myrmica scabrinodis	19.49
Myrmica sabuleti	10.17
Tapinoma subboreale	8.90
Lasius platythorax	6.36
Lasius niger	5.93
Formica rufibarbis	2.05
Formica cunicularia 8.	0.68
total	123.92

Species richness index S_{100} 7.12 species / 100 m².
The plot is a rare case for occurrence of *L. platythorax* in an oligotrophic grassland which is probably explained by the microclimatic situation. Its nest were nearly always excavated in former *L.flavus* mounds, only once in moss outside of a mound.

SP 199: Zwergstrauchheide Riesengebirge

Habitat type: subalpine dwarf-shrub heath
Date of investigation: 6 September 2004, 13 June 2006
Situation: appr. 225 m SW of the Schneegrubenbaude, 50.7780°N, 15.5536°E, 1465 m
Plot size: Q-area 300 m², habitat size: many ha
Orography (slope and orientation of surface): 8°SSW
Soil conditions: shallow, acidic topsoil over blocks of Gneiss, crevices between the blocks nearly always filled with fine material, blocks not covered by topsoil only on 3% of surface.
Comments: situated within a bare block field without topsoil formation.
Vegetation:
– tree layer (cover of living and death trees 15%, height 2 m, diameter breast height 5-12 cm):
stunted form (upper tree line) of *Picea abies*, 60% of the tree parts dead
– herb layer (cover 93%):
Grasses (*Nardus stricta, Agrostis rupestris, Calamagrostis villosa*) 48%, *Vaccinimum myrtillus* 29%, *Calluna vulgaris* 10%, *Vaccinium vitis-idaea* 5%, *Homogyne alpina*, *Hieracium nigrescens*, *Hypercia selago, Solidago virgaurea, Gentiana asclepiadea, Veratrum album lobelianum*
– moss and lichen layer (cover 3%)
Sphagnum girgensohnii (few in clefts), *Rhytidodelphus squarrosus, Polytrichum juniperinum, Dicranum scoparium, Cetraria islandica*, *Cladonia squamosa, Cladonia deformis, Cladonia pyxidata, Lepraria caesioalba*
– litter layer (cover 25%, 1.5 cm):
dead parts of dwarf shrubs.

– dead wood on ground (cover 3%):
few lying stems of spruce, standing dead wood dominating
– physico-chemical factors, plant and stone density:
T_{MAX} 12.30°C, T_{MEAN} 6.82°C, F (moisture) 5.27, N (nutrients) 2.40, R (Ca^{++}) 2.94, M 3, PD 1500, S 0.04

Ant species	nests / 100 m²
Formica lemani	3.00
total	3.00

Species richness index S_{100} 1.0 species / 100 m².
F. lemani had only small nests. One founding gyne of *Camponotus herculeanus* without workers in the base of a dead spruce trunk. Not a single foraging *Myrmica* or *Leptohorax* was seen despite very good weather conditions! Abundant dead wood should provide nest sites for *L. acervorum*. The poor ant population in a structurally sufficient habitat is probably explained by the well-developed herb layer and by a very low sunshine probability from May to August – the latter is 31.4% in a 30-years average [for comparison: the most sunshine-deficient of all German stations, Brocken, has 36.9%].

SP 200: Steilhangwald Wulmer Hang

Habitat type: steep-slope broad-leafed woodland
Date of investigation: 18 July 2006 Seifert
Situation: Schlunzig-Kirche-0.94 km SSE, 50.78462°N, 12.50521°E, 245 m
Plot size: S-area 7.06 m², Q-area 99 m², habitat size: 1.9 ha
Orography (slope and orientation of surface): 38° WSW
Soil conditions: loess-loam with few coarse gravel and rubble over New Red (Rotliegendes), the last was freely exposed on only a small patch. The Ah horizon was very weak due to steeply sloping ground.
Comments: small nature conservancy area (Flächennaturdenkmal). The habitat was formed as an undercut slope of the river Zwickauer Mulde and is a 550 metres long and on average 35 m wide steep-slope woodland. It is limited in the west by the river. The upper margin of the plot ended 5 m below the upper edge of the slope. The latter was shielded from an area of arable land by a 6 m wide stripe of *Prunus-spinosa* shrub.
Vegetation:
– tree layer (cover 85%, mean height 23 m, diameter breast height 75 cm in old oaks, max. 55 cm in the other tree species:
Acer pseudoplatanus, *Acer platanoides*, *Quercus robur*, *Fraxinus excelsior*
– shrub layer (cover 5%, mean height 2.5 m):
Sambucus nigra, *Sambucus racemosa*
– herb layer (cover 5%):
Acer pseudoplatanus, *Acer platanoides*, *Convallaria majalis*, *Dryopteris filix-mas*, *Glechoma hederacea*, *Hieracium murorum*, *Hieracium lachenalii*, *Impatiens parviflora*, *Luzula luzuloides*, *Mercurialis perennis*, *Poa nemoralis*, *Polygonatum multiflorum*, *Petasites albus*, *Quercus robur*, *Stellaria holostea*
– moss and lichen layer (cover 5%, 1.5 cm):
Plagiothecium laetum, *Mnium hornum*
– litter layer (cover 70%, 6 cm):
– dead wood on ground (cover 15%):
twigs and branches, acorns, one lying stem of 25 cm diameter
– physico-chemical factors, plant and stone density:
T_{MAX} 14.70°C, T_{MEAN} 13.74°C, F (moisture) 5.15, N (nutrients) 4.92, R (Ca^{++}) 4.70, M 2, PD 100, S 0.05

Ant species	nests / 100 m²
Temnothorax nylanderi	538.24
Lasius brunneus	14.16
Leptothorax gredleri	9.13
Myrmica ruginodis 4.	6.06
total	568.56

Species richness index S_{100} 6.14 species / 100 m².
T. nylanderi in acorns and pieces of twigs and branches. Soil during investigation dust dry .

SP 201: Jonastal-Bienstein

Habitat type: xerothermous limestone grassland

Date of investigation: 8 June 2007 (B. Seifert), 10 June 2007 (B. Seifert, Norma Nitschke, Manfred Türke, Lars Clement, Dorthe Veddeler)
Situation: Gossel-2.3 km NE, 50.8143°N, 10.8709°E, 420 m
Plot size: S-area 44 m², Q-area 165 m², habitat size in vertical projection appr. 4000 m² within a rubble slope of totally 18000 m².
Orography (slope and orientation of surface): slope 35°, azimuth 10°
Soil conditions: a very shallow, 5-10 cm strong, humous protorendzina mixed with much fine gravel on 50% of surface. On the remaining 50% of surface limestone protosoil consisting of 5 cm of grit, fine gravel and loess. In patches freely exposed limestone rock.
Comments: Upper part of a steep slope of limestone rubble, about 40 m above the bottom of the valley. Few pines (*Pinus sylvestris*) of 8-20 cm diameter breast height in the area but investigation was done in treeless patches only. Above the plot inceasing density of pines with transition into a wood. Removal of pines was done on the plot and the slope area below in 1997 to improve the habitat quality for *Oedipoda germanica.*
Vegetation:
– herb layer (cover 40%):
Anthericium ramosum, *Sesleria albicans*, *Carex humilis*, *Thalictrum minus*, *Teucrium montanum*, *Teucrium chamaedrys*, *Euphorbia cyparissias*, *Cynanchum vincetoxicum*, *Sanguisorba minor*, *Hieracium pilosella*, *Cirsium acaule*, *Salvia pratensis*, *Prunus spinosa* (up to 30 cm high), *Rosa* spec., *Lotus corniculatus*, *Thymus praecox*, *Hippocrepis commosa*
– moss and lichen layer (cover 1%, 1.5 cm)
– litter layer (cover 2%, 0.2 cm):
very few needles and cones of pines
– dead wood on ground (cover 0.1%):
very few pine twigs, a single stump of 10 cm diameter
– physico-chemical factors, plant and stone density:
T_{MAX} 30.00°C, T_{MEAN} 16.49°C, F (moisture) 3.00, N (nutrients) 2.47, R (Ca^{++}) 7.77, M 2, PD 480, S 5.5

Ant species	nests / 100 m²
Temnothorax tuberum	25.00
Myrmica sabuleti	22.73
Lasius flavus	9.09
Myrmica schencki	6.82
Lasius niger	6.82
Tapinoma erraticum	6.82
Tetramorium impurum	5.12
Lasius alienus	4.55
Myrmecina graminicola	4.55
Tetramorium caespitum	3.40
Camponotus ligniperda	3.03
Formica clara	2.42
Lasius platythorax	2.27
Lasius meridionalis	2.27
Myrmica lonae 15.	2.27
Temnothorax unifasciatus	1.92
Formica sanguinea	1.21
Tapinoma subboreale	0.85
Temnothorax nylanderi	0.85
Formica cunicularia	0.61
Formica fusca 21.	0.30
total	112.9

Species richness index S_{100} 20.55 species / 100 m².
Die very high species richness is explained by the transition of the habitat from a very light pine forest into an open very xerothermous grassland performed by habitat management 9 years ago. This explains the untypical for a xerothermous limestone grassland dominance of *Lasius niger* over *L.alienus* and the strange occurence of the woodland species *Lasius platythorax* and *T. nylanderi* . According to an aerial photo of 2015, *Pinus* upgrowth has been completely removed.

SP 202: Feuchtwiese Stausee Kelbra
Habitat type: moist cut meadow

Date of investigation: 3 May 2008
Situation: Auleben-(church)-2.5 km E, 51.427°N, 10.968°E, 155 m
Plot size: S-area 37.7 m², Q-area 37.7 m², habitat size: 1000 m²
Orography (slope and orientation of surface): 0°
Soil conditions: 15 cm Ah horizoon over alluvial loam
Comments: situated 5 m west of a reed and willow scrub fringing the water of the Kelbra reservoir. Cut meadow.
Vegetation:
– herb layer (cover 98%):
Potentilla anserina, *Alopecurus pratensis*, *Carex vulpina*, *Carex disticha*, *Cerastium holosteoides*, *Veronica chamaedrys*, *Cirsium arvense*, *Taraxacum officinale*, *Galium album*, *Symphytum officinale*, *Trifolium dubium*, *Trifolium pratense*, *Dausus carota*, *Arctium tomentosum*, *Bromus hordeaceus*, *Sonchus* spec., *Ranunculus repens*, *Juncus compressus*, *Vicia angustifolia*, *Vicia tetrasperma*
– moss and lichen layer (cover 5%, 2 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 19.80°C, T_{MEAN} 14.98°C, F (moisture) 6.07, N (nutrients) 5.71, R (Ca^{++}) 6.17, M 3, PD 2000, S 0
The temperatures are a prediction for an assumed seasonal mean of herb layer height of 20 cm using the system of guiding values.

Ant species		nests / 100 m²
Myrmica gallienii	1.	42.40
total		42.40

Species richness index S_{100} 1.00 species / 100 m².

SP 203: Pillnitz, Eichen am Schöpstal

Habitat type: grassland-woodland ecotone below a row of very strong oaks
Date of investigation: 23 and 24 July 2008 (R. Schultz, B. Seifert)
Situation: Schloßpark Pillnitz 1.0 km ESE°, 51.0064°N, 13.8843°E, 120 m
Plot size: S-area 31.33 m² [51.00589°N,13.8859°E], Q-area 75.24 m², SI-search on 630 m² area below oaks. Habitat size: 800 m² (below oaks) within a total area of oaks plus meadow of 2040 m².
Orography (slope and orientation of surface): 4° SSW (azimuth 27°)
Soil conditions: 8 cm mull plus raw humus / 12 cm humus + loess-loam / alluvial loam
Comments: 6 to 10 m wide, 300 m long, linear meadow stripe situated between a horse paddock and a fallow of arable land. The investigation was restricted to the very area described by the vertical canopy projection of six strong oaks scattered over this meadow stripe. Distance between the most southeastern and most northwestern oak 250 m. Separated from the horse padock by an old wooden paddock fence. The grass of the plots is not mowed or grazed and is accordingly densely felty. Due to low-hanging oak branches, there is in midsummer no sun-exposure of the ground before 17:00 h (in spring and autumn beginning at 12:00 h).
Vegetation:
– tree layer (cover 80%, big oaks 21-29 m high, diameter breast height 110-210 cm):
Quercus robur
– shrub layer (cover 3%, mean height 120 cm):
Sambucus nigra, *Prunus spinosa*, *Prunus serotina*
– herb layer (cover 70%, largely grasses):
Dactylis glomerata, *Agrostis capillaris*, *Deschampsia flexuosa*, *Bromus sterilis*, *Elyrigia repens* [= *Agropyron repens*], *Chenopodium album*, *Galeobdolon luteum*, *Convolvulus arvensis*, *Impatiens parviflora*, *Sambucus nigra*, *Quercus robur*, *Prunus mahaleb*, *Prunus serotina*, *Malva sylvestris*
– moss and lichen layer (cover 0.1%, 2 cm)
Ceratodon purpureus (only on bark of oak trunk foots)
– litter layer (cover 30%, 2cm):
oak leafs and acorns
– dead wood on ground (cover 2%):
oak branches of 1 to 25 cm diameter , few oak bark pieces
– physico-chemical factors, plant and stone density:
T_{MAX} 19.75°C, T_{MEAN} 15.99°C, F (moisture) 4.31, N (nutrients) 5.58, R (Ca^{++}) 5.20, M 3, PD 1800, S 0

Ant species	nests / 100 m²
Temnothorax crassispinus	221.67
Temnothorax parvulus	53.50
Dolichoderus quadripunctatus	15.28

Myrmica ruginodis	11.96
Temnothorax affinis	10.19
Lasius brunneus	7.98
Myrmica rubra	7.98
Temnothorax saxonicus	5.10
Leptothorax acervorum	5.10
Camponotus fallax	5.09
Temnothorax corticalis	2.55
Myrmica sabuleti	1.33
Myrmica rugulosa	1.33
Lasius niger	1.33
Formica fusca	0.48
Lasius emarginatus	0.16
Lasius fuliginosus	0.12
Formica polyctena 18.	0.12
Total	351.27

Species richness index S_{100} 16.71 species / 100 m².
Temnothorax nests largely on litter-covered patches, rarely on grass-covered surfaces. It was striking that nests of three truly arboreal ant species were found on ground more than 3 m away from the oak trunks: 2 nests of *Dolichoderus* and one nest each of *T. affinis* and *T. corticalis* in fallen dead branches. These nests were probably torn down by several heavy hail storms in 2007 and 2008.

SP 204: Eichentrockenwald Gröditzer Skala

Habitat type: xerothermous oak wood on rock
Date of investigation: 3 August 2008, 13 May 2009, 23 May 2009, 25 May 2009
Situation: Gröditz (church)-0.966 km E, 51.2078°N, 14.6381°E, 193 m
Plot size: non-canopy ants: S-area 45.63 m², canopy ants: S-area 70 m² (3 *Quercus petraea*, 1 *Tilia cordata*), habitat size: 200 m²
Orography (slope and orientation of surface): 29°S
Soil conditions: ranker on greywacke with 5-20 cm Ah.
Comments: light, slow-growing oak wood on outcropping rock in the transition zone from scarp to plateau. Investigated were only areas under the vertical canopy projection of trees.
Vegetation:
– tree layer (cover 58%, height 4-7 m, diameter breast height 15-25 cm):
largely *Quercus petraea*, one *Tilia cordata* and one *Carpinus betulus*
– shrub layer (cover 3%, mean height 2 m):
Quercus petraea, *Carpinus betulus*
– herb layer cover 36%:
Festuca ovina-group (eudominant), *Deschampsia flexuosa*, *Hieracium pilosella*, *Hieracium sabaudum*, *Lychnis viscaria*, *Calluna vulgaris*, *Carpinus betulus*, *Quercus petraea*, *Spergula morisonii*, *Frangula alnus*
– mosses and lichens (cover 19%, 2 cm)
Ceratodon purpureus (Hedw.) Brid., *Dicranum polysetum* Sw., *Hypnum cupressiforme* Hedw., *Pohlia nutans* (Hedw.) Lindb., *Cladonia caespiticia* (Pers.) Flörke, *Cladonia coniocraea* auct., *Cladonia foliacea* (Huds.) Willd., *Lepraria* spec., *Neofuscelia loxodes* (Nyl.) Essl., *Xanthoparmelia conspersa* (Ach.) Hale
– litter layer (cover 13%, 0.5 cm):
some grass and leaf litter, acorns, pieces of fine twigs
– dead wood on ground (cover 2%):
few branches of up to 5 cm diameter , thin twigs
– physico-chemical factors, plant and stone density:
T_{MAX} 23.59°C, T_{MEAN} 16.53°C, F (moisture) 3.46, N (nutrients) 2.73, R (Ca^{++}) 3.46, M 3, PD 430, S 5

Ant species	nests / 100 m²
Temnothorax crassispinus	63.55
Myrmica sabuleti	28.49
Temnothorax unifasciatus	27.39
Temnothorax affinis	21.43
Formica fusca	12.05
Lasius emarginatus	9.86

Temnothorax saxonicus	8.77
Lasius brunneus	6.57
Dolichoderus quadripunctatus	5.71
Camponotus ligniperda	3.28
Tetramorium impurum	3.28
Camponotus fallax	2.86
Ponera coarctata	2.19
Temnothorax corticalis 13.	1.43
total	196.86

Species richness index S_{100} 14.07 species / 100 m².
7 *T. affinis*, 2 *Dolichoderus* and 1 *T. corticalis* nest were found on a 7 metres high oak with 113 m³ canopy volume = 8.8 nests /100 m³ Kronenvolumen. 7 tubes of *Atypus* on 45 m². *Tetramorium* only at margin to fully open area.

SP 205: Feldweg Dürrbach
Habitat type: sandy country lane
Date of investigation: 3 July 2009, 4 July 2009
Situation: Dürrbach-0.6 km ESE, 51.35918°N, 14.62452°E, 136 m
Plot size: S-area 60 m², Q-area 125 m², habitat size: 220 m²
Orography (slope and orientation of surface): inclination 2°, azimuth 220°
Soil conditions: 20 cm Ah horizon over sand, moderately compacted
Comments: the plot is a sandy farm track with almost bare ruts formig 40% of surface. There was a fallow of arable land on both sides of the track in the years 1993-2008 which was converted into an intensively cultivated maize field in 2009. Soil only moderately compacted but in spring 2009 affected by heavy-machine traffic and narrowing of the lane by expansive ploughing. This certainly lead to losses in the ant assemblage but the situation found in that year was still a reflection of the good within-fallow times.
Vegetation:
– herb layer (cover 58%):
Potentilla argentea, *Polygonum aviculare*, *Lolium perenne*, *Cyanus segetum*, *Erodium cicutarium*, *Capsella bursa-pastoris*, *Plantago lanceolata*, *Achillea millefolium*, *Bromus hordeaceus*, *Viola arvensis*, *Agropyron repens*, *Fallopia convolvulus*, *Conyza canadensis*, *Quercus robur*, *Spergularia rubra*, *Trifolium repens*, *Apera spica-venti*, *Festuca rubra*, *Anthemis tinctoria*, *Veronica arvensis*, *Setaria viridis*, *Geranium pusillum*, *Poa pratensis*, *Arabidopsis thaliana*, *Erophila verna*, *Rumex acetosella*, *Aphanes inexpectata*, *Vicia villosa*, *Crepis tectorum*
– moss and lichen layer (cover 0.2%, 0.5 cm)
– physico-chemical factors, plant and stone density:
T_{MAX} 30.30°C, T_{MEAN} 18.01°C, F (moisture) 4.27, N (nutrients) 5.10, R (Ca^{++}) 3.91, M 6, PD 600, S 0

Ant species	nests / 100 m²
Tetramorium caespitum	26.67
Lasius niger	23.33
Strongylognathus testaceus	6.67
Formica sanguinea	3.75
Myrmica schencki	3.33
Formica fusca 6.	0.80
total	64.55

Species richness index S_{100} 6.05 species / 100 m².

SP 206: Ziegen/Schafweide auf Lawinarrasen Laaser Tal
Habitat type: subalpine sheep pasture on avalanche lawn
Date of investigation: 6 August 2007 (F. Glaser)
Situation: Laas-4.5 km S, 46.5764°N,10.6952°E, 1700 m
Plot size: S-area 56 m², habitat size: <1000 m²
Orography (slope and orientation of surface): 10° NE, surroundings of the plot sloping W
Soil conditions: residual soil on alluvial rubble of lime (marble) and silicate rock, rubble on 15% of surface freely exposed.
Comments: narrow, about 10 m wide turf band. The succession to woodland is hampered by grazing and avalanche dynamics. The plot has a cold microclimate due to northern slope of the ground and the considerable skyline shading by high mountains in the surroundings. Direct exposure of the

ground surface to sunlight is given in the period 20 April to 30 August between 8:40 h and 16:40 h solar time only.
Vegetation:
– shrub layer (cover 20%, mean height 1 m):
Larix decidua
– herb layer (cover 85%):
Antennaria dioica, *Aster bellidiastrum*, *Astragalus alpinus*, *Bartsia alpina*, *Biscutella laevigata*, *Calamagrostis villosa*, *Carex caryophyllea*, *Carex digitata*, *Carlina acaulis*, *Coeloglossum viride*, *Daphne mezereum*, *Dryas octopetala*, *Euphorbia cyparissias*, *Fragaria vesca*, *Galium anisophyllon*, *Gentiana verna*, *Helianthemum grandiflorum* agg., *Hieracium lactucella*, *Hieracium pilosella*, *Hieracium villosum*, *Homogyne alpina*, *Juniperus communis* ssp. *alpina*, *Larix decidua*, *Lotus corniculatus*, *Parnassia palustris*, *Persicaria vivipara*, *Pinguicula vulgaris*, *Plantago media*, *Poa alpina*, *Potentilla aurea*, *Ranunculus montanus*, *Rhododendron ferrugineum*, *Salix repens* ssp. *rosmarinifolia*, *Selaginella helvetica*, *Selaginella selaginoides*, *Sesleria albicans*, *Taraxacum alpinum* agg., *Tortella tortuosa*, *Trifolium repens*, *Vaccinium vitis-idaea* and *Viola biflora* (Hotter, unpubl.).
– moss and lichen layer (cover 1%)
– litter layer (cover 2%, 1 cm):
not recorded, assumed were some 2% and 1 cm litter from dwarf shrubs, *Juniperus* and *Rhododendron* as usual in such sites
– dead wood on ground (cover 0.1%):
no data but probably <0.5%
– physico-chemical factors, plant and stone density:
T_{MAX} 14.15°C, T_{MEAN} 8.58°C, F (moisture) 5.00, N (nutrients) 3.23, R (Ca^{++}) 6.14, M 4, PD 425, S 5
Temperatures were calculated under combination of structure-specific guiding values, geographical data, slope of the ground and skyline shading.

Ant species	nests / 100 m²
Formica lemani	53.57
Myrmica lobulicornis	21.43
Myrmica lobicornis	1.79
Myrmica sulcinodis	1.79
Myrmica myrmicoxena	1.79
Formica lugubris 6.	0.10
total	80.39

Species richness index S_{100} 5.64 species / 100 m².

SP 207: Kiefernwald am Locherboden

Habitat type: xerothermous pine forest on limestone
Date of investigation: 19 June 2010 (F. Glaser, H. Müller, B. Schlick-Steiner, B. Seifert, F. Steiner)
Situation: Stams-1.1 km N, 47.287°N, 10.981°E, 730 m,
Plot size: S-area 44 m², Q-area 88 m², habitat size: 400 m²
Orography (slope and orientation of surface): 30°S
Soil conditions: rendzina with 25-30 cm Ah horizon over solid limestone. 10% of surface with fine to coarse rubble and 5% with bare humus soil.
Comments: light pine forest of 400 m² on a steep southern slope, flanked on both sides by a more closed mixed forest with more developed broad-leafed understory (largely *Corylus*). Above the plot is a rocky scarp with much rubble beneath.
Vegetation:
– tree layer (cover 45%, height 12-15 m, diameter breast height 12-30 cm):
Pinus sylvestris
– shrub layer (cover 15%, height 1-4 m):
Berberis vulgaris, Juniperus communis alpina, Corylus avellana, Pinus sylvestris
– herb layer (cover 33%):
Amelanchier ovalis, *Berberis vulgaris*, *Carex* cf. *montana*, *Carex humilis*, *Carlina vulgaris*, *Cirsium* cf. *acaule*, *Crataegus* sp., *Dorycnium germanicum*, *Epipactis spec.*, *Euphorbia cf. cypassias*, *Fragaria viridis*, *Frangula alnus*, *Galium lucidum*, *Helianthemum nummularium* agg., *Hieracium bifidum*, *Hieracium* cf. *mucrorum*, *Juniperus communis alpina*, *Melica nutans*, *Teucrium montanum*, *Thymus* spec., *Vincetoxicum hirundinaria*, *Viola hirta*
– moss and lichen layer (cover 0.5%, 2 cm)
Fissidens adianthoides Hedw.
– litter layer (cover 44%, 0.5 cm):

pine needles and cones
– dead wood on ground (cover 5%):
twigs of 1.5-4 cm diametern one lying pine stem on Q-area
– physico-chemical factors, plant and stone density:
T_{MAX} 20.00°C, T_{MEAN} 14.47°C, F (moisture) 3.70, N (nutrients) 2.50, R (Ca^{++}) 7.18, M 2, PD 495, S 7
Temperatures were estimated under combination of structure-specific guiding values, meteorological data, geographical data and slope of the ground.

Ant species	nests / 100 m²
Temnothorax crassispinus	40.90
Lasius flavus	29.54
Myrmica lonae	3.41
Formica sanguinea	2.27
Myrmecina graminicola	2.27
Lasius psammophilus	1.14
Camponotus ligniperda	x
Formica fusca 8.	x
total	79.53

Species richness index S_{100} 6.15 species / 100 m².
Richness and density of ants were certainly underestimated due to cold and rainy weather during collecting. The nests of *L. flavus* contained small-sized workers and developed weak populations.

SP 208: Viehtrift Tigias

Habitat type: alpine cattle trail
Date of investigation: 10 July 2010 [R. Schultz, B. Seifert]
Situation: 120 m ESE Hotel Piz Platta, 46.52105°N, 9.65681°E, 1989 m
Plot size: S-area 46.60 m², Q-area 93.2 m², habitat size: 250 m²
Orography (slope and orientation of surface): 17° NW [slope 17°, azimuth 130°]
Soil conditions: strongly compacted by cattle trampling, soil down to at least 40 cm strongly humous with 40% of the volume formed by coarse gneiss rubble.
Comments: strongly grazed and trampled cattle trail. 5% of surface are covered by stones of 10-30 cm diameter, 10% by bare raw soil as result of soil injury by cattle and 4% by cattle feces. A wild stream with strong current was 10 m away. Skyline shading in the east and southeast up to 20°.
Vegetation:
– herb layer (cover 80%, mean height 3.8 cm):
Alchemilla spec., *Anthyllis vulneraria* s.l., *Aster bellidiastrum*, *Carum carvi*, *Centaurea nervosa*, *Cerastium fontanum* ssp. *vulgare*,*Chaerophyllum villarsii*, *Crepis aurea*, *Festuca* cf. *violacea*, *Festuca ovina* aggr.,*Galium anisophyllum*, *Gentiana* cf. *nivalis*, *Geranium sylvaticum*, *Leontodon hispidus hispidus*, *Lotus corniculatus*, *Peucedanum ostruthium*, *Phleum rhaeticum*, *Phyteuma orbiculare*, *Poa* cf. *molineri*, *Polygala* cf. *alpestris*, *Ranunculus nemorosus* (syn. *R. tuberosus*), *Rhinanthus glacialis*, *Rumex alpestris*, *Silene vulgaris* ssp. *vulgaris*, *Tragopogon pratensis* s.l., *Trifolium pratense* ssp. *pratense*, *Trifolium repens*, *Tussilago farfara*, *Veratrum album*, *Veronica serpyllifolia* ssp. *humifusa*, *Viola* spec.
– moss and lichen layer (cover 1%, 1 cm)
Bryum spec. (aff. *B. algovicum*)
– physico-chemical factors, plant and stone density:
T_{MAX} 18.38°C, T_{MEAN} 8.22°C, F (moisture) 4.76, N (nutrients) 4.81, R (Ca^{++}) 6.57, M 7, PD 307, S 3

Ant species	nests / 100 m²
Myrmica lobulicornis	30.04
Formica lemani	8.58
Leptothorax acervorum 3.	4.29
total	42.91

Species richness index S_{100} 3.86 species / 100 m².
Nests of all three ant species nearly always under stones to have protection from cattle trampling.

SP 209: Almweide Salategnas

Habitat type: Date of investigation: 11 July 2010 [R.Schultz, B. Seifert]
Situation: 46.51847°N, 9.65866°E, 2096 m
Plot size: S-area 47.03 m², Q-area (= pseudo-f) 79.95 m², habitat size: 1800 m²

Orography (slope and orientation of surface): 23° W [slope 23°, azimuth 80°]
Soil conditions: Ah horizon at least 30 cm thick. Upper 5 cm of Ah with a dense and solid root felt of grasses as result of soil compaction by cattle, deeper layers less compacted and containing a mixture of different stones.
Comments: frequent cattle grazing with rather strong trampling. Plot immediately below a plateau. Marmots. Skyline shading in the east 20°.
Vegetation:
– herb layer (cover 97%, mean height 4 cm):
Alchemilla spec., *Androsace chamaejasme*, *Antennaria dioica*, *Anthoxanthum alpinum*, *Anthyllis vulneraria* s.l., *Arnica montana*, *Campanula scheuchzeri*, *Crepis aurea*, *Galium anisophyllum*, *Helictotrichon pratense*, *Leontodon helveticus*, *Leucanthemopsis* cf. *alpina*, *Lotus corniculatus*, *Luzula multiflora*, *Nigritella nigra* agg., *Phyteuma hemisphaericum*, *Plantago alpina*, *Poa alpina*, *Poa* cf. *molineri*, *Potentilla aurea*, *Pulsatilla* cf. *vernalis*, *Ranunculus acris*, *Thymus pulegioides* agg., *Trifolium alpinum*, *Trifolium pratense* s.l., *Vaccinium vitis-idaea*, *Selaginella selaginoides*
– moss and lichen layer (cover 7%, 2 cm)
Cetraria islandica (L.) Ach., *Dicranum muehlenbecki* Bruch & Schimp., *Climatium dendroides* (Hedw.) F.Weber &V D.Mohr
– physico-chemical factors, plant and stone density:
T_{MAX} 17.52°C, T_{MEAN} 7.48°C, F (moisture) 4.73, N (nutrients) 2.73, R (Ca^{++}) 4.77, M 6, PD 388, S 1.2

Ant species		nests / 100 m²
Myrmica lobulicornis		17.51
Leptothorax acervorum	2.	3.75
total		21.26

Species richness index S_{100}: 2.52 species / 100 m².
Nests in solidified root felt of grasses and at or under under stones. In contrast to the two myrmicine species, *F. lemani* seems to stand cattle trampling only if larger stones provide protection of the nests.

SP 210: Seslerio-Caricetum Ruigna

Habitat type: Seslerio-Caricetum in a partially fixed rubble fan
Date of investigation: 13 July 2010 [R.Schultz, B. Seifert]
Situation: 46.53891°N, 9.64777°E, 2097 m
Plot size: S-area 43.94 m², pseudo-Q-area 87.88 m², habitat size: 500 m²
Orography (slope and orientation of surface): 35° SSE [slope 35°, azimuth 340°]
Soil conditions: 68% of ground with at least 25 cm Ah horizon at areas with well developed herb layer, *Carex* and *Sesleria* in particular. 32% of ground with a humus-deficient protosoil of coarse and fine limestone rubble.
Comments: steep rubble field partially fixed by vegetation and soil deposits. Situated below a steep scarp. An instable rubble fan is directly neighboring.
Vegetation:
– herb layer (cover 68%, mean height 14 cm):
Acinos alpinus, *Anthyllis vulneraria* s.l., *Carduus defloratus*, *Biscutella laevigata*, *Carex sempervirens*, *Galium anisophyllum*, *Gymnadenia odoratissima*, *Gypsophila repens*, *Helianthemum nummularium* agg., *Hieracium hoppeanum*, *Hieracium pilosum*, *Leucanthemum adustum*, *Linum catharticum*, *Lotus corniculatus*, *Orobranche* cf. *reticulata*, *Phleum hirsutum*, *Rosa glauca*, *Saponaria ocymoides*, *Scabiosa lucida*, *Senecio doronicum*, *Sesleria albicans, Silene vulgaris* ssp. *vulgaris, Thymus pulegioides* agg., *Valeriana montana*
– moss and lichen layer (cover 1%, 2 cm)
– litter layer (cover 1%, 1 cm):
needles of *Juniperus*
– dead wood on ground (cover 1%):
branches of *Juniperus*
– physico-chemical factors, plant and stone density:
T_{MAX} 20.96°C, T_{MEAN} 8.21°C, F (moisture) 4.24, N (nutrients) 2.39, R (Ca^{++}) 7.71, M 2, PD 952, S 8.0

Ant species		nests / 100 m²
Formica lemani		25.00
Temnothorax tuberum		17.62
Tetramorium alpestre	3.	4.00
total		46.62

Species richness index S_{100}: 3.84 species / 100 m².

SP 211: Mähwiese Scalotta

Habitat type: montane cut meadow
Date of investigation: 15 July 2010 [R.Schultz, B. Seifert]
Situation: Sur-1.0 km S, 46.51364°N, 9.63148°E, 1635 m
Plot size: S-area 37.54 m², habitat size: 500 m²
Orography (slope and orientation of surface): 30° S [slope 30°, azimuth 350°]
Soil conditions: At least 30 cm brown earth, beginning from 20 cm depth and deeper mixed with fine rubble.
Comments: meadow once mowed a year with accessory sepp grazing. The plot was situated in the loop of a serpentine road: the centre of the plot was 13 m above the lower part of the road and 12 m below a scrub stripe flanking the higher part of the road.
Vegetation:
– herb layer (cover 100%, mean height 20 cm):
Agrostis capillaris, *Agrostis* cf. *capillaris*, *Briza media*, *Carex flacca*, *Carex* cf. *ornithopoda*, *Campanula scheuchzeri*, *Centaurea nervosa*, *Centaurea scabiosa* ssp. cf. *alpestris*, *Colchicum autumnale*, *Crepis pyrenaica*, *Dactylis glomerata*, *Festuca* cf. *rupicola*, *Fragaria vesca*, *Helictotrichon pratense*, *Heracleum sphondylium*, *Hieracium pilosella*, *Linum catharticum*, *Polygonum bistorta*, *Sanguisorba officinalis*, *Sanguisorba minor*, *Scabiosa columbaria*, *Silene vulgaris* ssp. *vulgaris*, *Thlaspi caerulescens* s.l., *Thymus pulegioides* agg.
– physico-chemical factors, plant and stone density:
T_{MAX} 14.86°C, T_{MEAN} 9.30°C, F (moisture) 4.62, N (nutrients) 3.45, R (Ca^{++}) 6.77, M 3, PD 2000, S 0.1

Ant species	nests / 100 m²
Myrmica scabrinodis	23.97
Formica lemani	21.31
Myrmica ruginodis	5.33
Myrmica lobicornis 4.	5.33
total	55.94

Species richness index S_{100}: 4.93 species / 100 m².

SP 212: Fichtenwald Motta

Habitat type: montane spruce forest
Date of investigation: 17 July 2010, [R. Schultz, B. Seifert]
Situation: Sur-1.3 km SE, 46.51222°N, 9.64314°E, 1869 m
Plot size: S-area 352 m², Q-area 1130 m², wood ant recording on 5000 m², habitat size: 12000 m²
Orography (slope and orientation of surface): 19° E [slope 19°, azimuth 245°]
Soil conditions: 2 cm needle litter / 3 cm mull to raw humus with much fungal hyphes / 3 cm humous loam / 18 cm (or more) loam
Comments: old spruce forest situated in a V-shaped valley runing in north-south direction. Skyline shading 29° in the east and 19° the west. Spruce with branches close to ground (here dead because of light deficiency). Mean distance of stems 4.12 m (= 590 stems / ha). Ground with stones and blocks on 3% of surface.
Vegetation:
– tree layer (cover 83%, height 18-24 m, diameter breast height 40-100 cm, trees frequently with two or three stems growing up from a single, fused stem foot, few junger trees with 5-10 cm diameter at breast height [DBH] and 8-12 m height):
97% *Picea abies*, 3% *Larix decidua*
– herb layer (cover 10%, mean height 10 cm):
Chaerophyllum hirsutum, Saxifraga cuneifolia, Vaccium myrtillus, *Oxalis acetosella*, *Sorbus aucuparia*
– moss and lichen layer (cover 8%, thereof moss 3%; 2 cm, lichens 5%, 3 cm)
lichens on tree branches: *Pseudevernia furfuracea* (L.) Zopf, *Bryoria nadvornikiana* (Gyeln.) Brodo & D. Hawksw., *Usnea lapponica* Vain., *Hypogymnia physodes* (L.) Nyl., *Ochrolechia alboflavescens* (Wulfen) Zahlbr., *Lecanora chlarotera* Nyl.
Lichens on tree bases, soil or rock: *Vulpicida pinastri* (Scop.) Mattsson & M. J. Lai, *Parmeliopsis hyperopta* (Ach.) Arnold, *Parmeliopsis ambigua* (Wulfen) Nyl., *Lepraria* spec.
Mosses: *Mnium spinulosum* Bruch & Schimp., *Lescuraea saxicola* (B. S. G.) Milde, *Rhytidiadelphus triquetrus* (Hedw.) Warnst.
– litter layer (cover 95%, 2 cm):

needles and spruce cones
– dead wood on ground (cover 8%):
branches and a largely rotten woodpile
– physico-chemical factors, plant and stone density:
T_{MAX} 7.37°C, T_{MEAN} 6.47°C, F (moisture) 5.29, N (nutrients) 2.92, R (Ca^{++}) 3.31, M 3, PD 100, S 1

Ant species		nests / 100 m²
Formica paralugubris	1.	0.02
total		0.02

Species richness index S_{100}: 0.02 species / 100 m².
There was not a single *Camponotus herculeanus* at the 65 trees checked and not a single foraging worker of *Myrmica ruginodis* was observed despite optimum weather conditions. *Formica paralugubris* seemed to be the only ant reproducing in this cold habitat, showing an activity density of appr. 2 workers / m² forest soil.

SP 213: Halbtrockenrasen am Schafberg Baruth

Habitat type: mesoxerophytic grassland
Date of investigation: 23 May 2010 (B.Seifert), 5 August 2010 (B.Seifert, M.Krahl, A. Bagherian, Z. Zakia)
Situation: Baruth-1.0 km E, 51.23248°N, 14.60232°E, 170 m
Plot size: S-area 34.10 m², Q-area 400 m², habitat size: 400 m²
Orography (slope and orientation of surface): 16° ESE, azimuth 286°
Soil conditions: 20 cm loamy Ah horizon with 15 volume-% basalt rubble.
Comments: eastern slope of a basalt mountain. Cut meadow mowed once or twice a year. Heterogenenous. 50% of surface with broad ruts of a former two-lane ramp used 20 years ago. The ruts with much lower vegetation (*Sedum sexangulare*, *Potentilla argentea*, *Hieracium pilosella*). Area outside the ruts with more higher grasses (*Bromus*, *Arrhenaterum*). Soil compaction in the ruts still notable.
Vegetation:
– herb layer (cover 90%, mean height 12 cm):
Agrimonia eupatorium, *Agrostis tenuis*, *Arrhenaterum elatius*, *Bromus tectorum*, *Centaurea jacea angustifolia*, *Daucus carota*, *Echium vulgare*, *Hieratium pilosella*, *Knautia arvensis*, *Lotus corniculatus*, *Luzula campestris*, *Myosotis stricta*, *Phleum phleoides*, *Plantago lanceolata*, *Potentilla argentea*, *Sanguisorba minor*, *Sedum sexangulare*, *Selinum carvifolia*, *Thymus pulegioides*, *Trifolium arvense*, *Verbascum thapsus*
– moss and lichen layer (cover 40%, 2 cm)
Cladonia scabriuscula (Delise) Leight., *Hypnum cupressiforme* Hedw.
– physico-chemical factors, plant and stone density:
T_{MAX} 23.80°C, T_{MEAN} 16.39°C, F (moisture) 3.81, N (nutrients) 2.90, R (Ca^{++}) 5.59, M 3, PD 1080, S 0.12

Ant species		nests / 100 m²
Myrmica schencki		25.50
Myrmica scabrinodis		23.84
Tetramorium caespitum		23.84
Lasius flavus		17.03
Myrmica sabuleti		10.22
Formica cunicularia		2.55
Formica fusca		1.70
Temnothorax crassispinus		1.70
Myrmica rubra		1.70
Lasius niger		0.85
Formica sanguinea	11.	0.50
total		109.43

Species richness index S_{100} 10.55 species / 100 m².
The dominance of *M. schencki* is exceptional and not found in any other of the 232 plots.

SP 214: Pferdeweide Görlitz E

Habitat type: horse paddock on a glacial river terrace

Date of investigation: ants and structure 8 May 2012 (M. Ritz, B. Seifert, R. Schultz), botany 19 May 2012 (leg. B. Seifert, det. P. Gebauer, C. Ritz, V. Otte & B. Seifert), temperature 19 May**,** 20 May**,** 24 May**,** 29 June 2012 (B. Seifert)
Situation: Görlitz (centre) – 2.1 km NNE, 51.17321°N, 15.00038°E, 179 m
Plot size: S-area 79.12 m², Q-area 131.87 m², habitat size: 300 m² (within a total of 8200 m² horse paddock)
Slope, azimuth: 7°, 285°
Soil conditions: A horizon with at least 20 cm strongly humous, sandy loam, with much coarse gravel and boulder of glacial alluvial deposits. Topsoil strongly compacted. 19% of surface without plant cover.
Comments: the plot is the most dry and most sandy part of a horse paddock with a clearly differing species composition and structure of the herb layer. The area has been a meadow of unclear management situated on the ground of a market garden before 1989. It became a horse paddock in about 1995 with on average 7 horses / ha and was used as pasture with supplementary feeding twice a year for each a 4-week interval. Accordingly, extreme, rather short-term mechanic stress by horse trampling and grazing changed with longer periods of regeneration. There were almost no horse feces on the plot itself; these were concentrated on certain patches 20-40 m away. 29 June 2012**,** six weeks after the end of the first seasonal horse paddocking and much rainfall , the mean height of the herb layer had increased from 3 to only 11 cm whereas the herb layer had grown up to 50 cm in the adjacent fresh and more eutrophic parts of the paddock. This emphasizes the oligothrophy and xerothermy of the plot.
Vegetation:
– herb layer (cover 66%, mean height 3 cm 8 May 2012, 11 cm 29 June 2012):
Achillea millefolium, *Arrhenaterum elatius*, *Bromus hordeaceus*, *Cerastium glutinosum*, *Erodium cicutarium*, *Hieracium pilosella*, *Hypochoeris radicata*, *Lolium perenne*, *Myosotis stricta*, *Plantago lanceolata*, *Poa compressa*, *Potentilla argentea*, *Rumex acetosella*, *Rumex acetosa*, *Sedum acre*, *Tanacetum vulgare*, *Trifolium campestre*, *Trifolium dubium*, *Trifolium repens*
– moss and lichen layer (cover 15%, 0.5 cm high)
Moose: *Brachythecium albicans* (Hedw.) Schimp., *Ceratodon purpureus* (Hedw.) Brid.
Lichens: *Peltigera rufescens* (Weiss) Humb.
– litter layer (cover 2.6%, 0.5 cm):
– physico-chemical factors, plant and stone density:
T_{MAX} 29.44°C, T_{MEAN} 18.01°C, F (moisture) 3.53, N (nutrients) 3.72, R (Ca^{++}) 5.57, M 6, PD 462, S 1.50

Ant species	nests / 100 m²
Lasius niger	18.66
Tetramorium caespitum	4.31
Formica cunicularia	2.87
Myrmica rugulosa	2.87
Myrmica rubra 5.	0.36
total	29.07

Species richness index S_{100} 4.69 species / 100 m².

SP 215: Ackeraufforstung Dreiheide (PiI Fiedler)

Habitat type: pine forest
Date of investigation: 7 and 8 June 2012 (B. Seifert, P. Fiedler)
Situation: Dreiheide-1.0 km W, 51.5712°N, 12.8814, 131 m
Plot size: S-area 47.22 m², Q-area 67.45 m², habitat size: as sum of two subareas appr. 200 m².
Orography (slope and orientation of surface): Slope 2°, azimuth 315°
Soil conditions: 5-12 cm Ah over fine sand with very few alluvial coarse gravel. Soil form of the forest stand assessment (forstliche Standortbewertung): NeS.
Comments: Forest with 83-years-old pines founded as afforestation on arable land in 1931. Investigated were three patches with sufficient sun-exposure and (still) weak development of *Prunus serotina* that is in the process to completely cover the whole forest area, generating a complete shading of the forest floor. Areas with weak development of *Prunus serotina* (as in the plots) had decreased to 10% of total forest area in 2012. The pines were poorly-growing and had generated an only weak humus horizon with 81 years. *Vegetation*:
– tree layer (cover 30%, mean height 20 m, diameter breast height 25-50 cm, 280 stems / ha): *Pinus sylvestris*
– shrub layer (cover 15%, mean height 1 m):
Prunus serotina (up to 4 m height), *Betula pendula* (up to 1 m), *Sorbus aucuparia* (up to 4 m)

– herb layer (cover 30%, mean height 10 cm):
Avenella flexuosa, *Betula pendula*, *Calamagrostis epigeijos*, *Carex pilulifera*, *Dryopteris cartusiana*, *Hieracium* cf. *laevicaule*, *Melampyrum pratense*, *Quercus robur*, *Rubus idaeus*, *Rubus fruticosus*, *Rumex acetosella*, *Sorbus aucuparia*, *Pinus sylvestris*, *Vaccinium myrtillus*
– moss and lichen layer (cover 32%, 1.5 cm)
Mosses: *Cephaloziella rubella* (Nees) Warnst., *Dicranum scoparium* Hedw., *Dicranella heteromalla* (Hedw.) Schimp., *Hypnum jutlandicum* Holmen & E. Warncke, *Pleurozium schreberi* (Brid.) Mitt., *Polytrichum formosum* Hedw.
Lichens: *Placynthiella dasaea* (Stirt.) Tønsberg, *Placynthiella icmalea* (Ach.) Coppins & P. James, *Lecanora conizaeoides* Nyl. ex Cromb., *Lepraria lobificans* Nyl., *Lepraria incana* (L.) Ach., *Micarea prasina* Fr., *Cladonia coniocraea* (Flörke) Spreng., *Trapeliopsis flexuosa* (Fr.) Coppins & P. James, *Hypocenomyce scalaris* (Ach. ex Lilj.) M. Choisy
– litter layer (cover 38%, 1 cm):
pine needles and cones
– dead wood on ground (cover 3%):
pienb wood only: few 3-8 cm thick branches, one lying stem 10 cm thick and 4 m long, 8 rotting stumps / 100 m²
– uncovered soil (cover 2%):
humous fine sand
– physico-chemical factors, plant and stone density:
T_{MAX} 22.45°C, T_{MEAN} 15.99°C, F (moisture) 3.82, N (nutrients) 3.76, R (Ca^{++}) 2.77, M 2, PD 300, S 0.02

Ant species	nests / 100 m²
Temnothorax crassispinus	31.77
Lasius platythorax	16.82
Formica fusca	11.12
Myrmica ruginodis	8.89
Lasius niger	6.47
Myrmica sabuleti	4.45
Formica sanguinea	3.71
Stenamma debile	2.12
Myrmica rubra	1.48
Dolichoderus quadripunctatus 10.	0.10
total	86.93

Species richness index S_{100} 9.77 species / 100 m².
The single nest of *Dolichoderus quadripunctatus*, situated 16 m high in a pine canopy, was detected by telescope observation from ground. The presence of *Lasius niger*, *Myrmica sabuleti* and *Formica sanguinea* as rather xerothermophilus species of more open land indicates a sufficient long-term sunexposure of the forest floor in the past.

SP 216: Schafweide Friedersdorf

Habitat type: fresh sheep pasture
Date of investigation: 9 July 2012 (M. Ritz, B. Seifert)
Situation: Friedersdorf(church) -1.4 km SW, 51.08712°N, 14.85240°E, 320 m
Plot size: S-area 32.96 m², Q-area 66 m², habitat size: 7000 m²
Orography (slope and orientation of surface): slope 4°, azimuth 270° (= E)
Soil conditions: para-brown earth to pseudogley, upper 50 cm clayey loam (slope wash= Gehängelehm). Influenced by a periodical spring: variable moisture from water-logged to fresh-dry.
Comments: Permanent grassland for at least 50 years. Until 1997: cattle pasture fertilized by 200 kg N /a, leading to low plant species richness and spreading of *Rumex obtusifolius*. Since 1998: intensive sheep pasture (temporary strip-grazing, usually from beginning of June to mid July), followed by 6 weeks regeneration with growth of herb layer up to ± 40 cm mean height (60 cm in tall grasses). Then mowed once with removal of the cuttings by the end of August. In case of mild late autumn, sheep grazing from end of November to end of December. Feces are mainly dropped in the shelter outside of the plot.
Vegetation:
– herb layer (cover 99%, mean height 15 April -31 August 15 cm, thereof: 15 April -31 May 10 cm, 1 June -15 July 9 cm during grazing, 16 July -31 August 25 cm):
Agrostis capillaris, *Bromus hordeaceus*, *Cardamine* pratensis, *Cerastium holosteoides*, *Dactylis glomerata*, *Glechoma hederacea*, *Holcus lanatus*, *Lolium perenne*, *Plantago lanceolata*, *Ranunculus*

acris, *Rumex acetosa*, *Rumex obtusifolius*, *Taraxacum officinale*, *Trifolium repens*, *Trifolium pratense.* (det. P. Gebauer & C. Ritz)
– moss and lichen layer (cover 0.1%,1.5 cm), det. V. Otte
Leptobryum pyriforme (Hedw.) Wilson
– litter layer (cover 0.1%, 0.3 cm):
dead grass
– dead wood on ground (cover %):
– physico-chemical factors, plant and stone density:
T_{MAX} 19.00°C, T_{MEAN} 14.90°C, F (moisture) 5.50, N (nutrients) 5.60, R (Ca^{++}) 5.00, M 4, PD 1500, S 0

Ant species		nests / 100 m^2
Myrmica rubra		21.24
Lasius niger	2.	1.52
total		**22.76**

Species richness index S_{100}: 2.18 species / 100 m². *L. niger*: no direct nest findings, observed were one foraging dwarf worker of a founding colony and one foraging large worker on another patch. Both together were scored as 0.5 found nests.

SP 217: Alpine Weide Innsbruck Seegrube

Habitat type: alpine pasture
Date of investigation: 24 July 2012 (M. Krahl, M.K. Kinzner, B. Seifert)
Situation: Innsbruck-4.5 kmW, 47.30546°N, 10.37709°E, 1925 m
Plot size: S-area 74.36 m², habitat size: 1600 m²
Orography (slope and orientation of surface): azimuth 328° (= SSE), slope: 23°
Soil conditions: rendzina on limestone, 12 cm Ah horizon with a dense and solid root felt of grasses as result of soil compaction by grazing and intensive skiing above silty loess with much fine rubble.
Comments: strong soil compaction by permanent cattle and sheep pasture during summer and running of a ski slope in winter.
Vegetation:
– herb layer (cover 94%, mean height 2.5 cm):
Alchemilla cf. *glaucescens*,*Alchemilla nitida*, *Avenella flexuosa*, *Bellis perennis*, *Briza media*, *Campanula scheuchzeri*, *Carex flacca*, *Carex sempervirens*, *Cerastium holosteoides*, *Cirsium spinosissimum*,*Clinopodium acinos*, *Crepis alpestris*, *Festuca nigrescens*, *Euphrasia minima*, *Geum montanum*, *Hieracium* cf. *lactuella*, *Hieracium schultesii* (= *lactuella* x *pilosella*), *Leontodon hispidus*, *Lotus corniculatus* var. *alpinus*, *Poa alpina*, *Homogyne alpina*, *Phyteuma betonicifolium*, *Phyteuma orbiculare*, *Potentilla erecta*, *Prunella vulgaris*, *Thymus pulegioides* ssp. *polytrichus*, *Trifolium pratense*
– mosses and lichens: 0.01%
Weissia spec. (indeterminable without spore capsules)
– physico-chemical factors, plant and stone density:
T_{MAX} 23.72°C, T_{MEAN} 9.70°C, F (moisture) 4.72, N (nutrients) 3.09, R (Ca^{++}) 4.94, M 6, PD 235, S 6.75

Ant species		nests / 100 m²
Myrmica scabrinodis		2.35
Myrmica lobulicornis	2.	1.18
total		9.41

Species richness index S_{100} 3.10 species / 100 m². Ant nests usually in root felt of herbs and only exceptionally under stones.

SP 218: Alpine Viehweide Kühtai SE-exponiert

Habitat type: alpine cattle pasture
Date of investigation: 25 July 2012 (M. Krahl, B. Seifert, H.C. Wagner)
Situation: Kühtai -0.4 km NE, 47.21664°N, 11.02751°E, 2046 m
Plot size: S-area 49 m², pseudo-Q-area 118 m², habitat size: 1000 m²
Orography (slope and orientation of surface): azimuth 307°(= SE), slope 24°
Soil conditions: 20 cm Ah horizon over 22 cm humous loam (Berglehm) over fine gneiss rubble with loam. The upper 12 cm of topsoil are characterized by an extremely solid and dense root felt. Coarse rubble and blocks at soil surface.
Comments: intensive summer pasture by cattle and running of ski slope in winter cause significant compaction of topsoil.
Vegetation:

– herb layer (cover 97.7%, mean height 2.5 cm):
Agrostis capillaris, Alchemilla flabellata, Calluna vulgaris,Campanula barbata, Campanula scheuchzeri, Carlina acaulis, Cirsium spinosissimum, Festuca nigrescens, Galium anisophyllon, Geum montanum, Hieracium pilosella, Juniperus communis alpina, Lotus corniculatus var. alpinus, Luzula alpina, Nardus stricta, Phyteuma orbiculare, Potentilla erecta, Ranunculus villarsii, Rhododendron ferrugineum, Silene vulgaris ssp. vulgaris, Thesium alpinum, Thymus pulegioides, Trifolium alpinum
– moss and lichen layer (cover 0.1%, 1 cm)
Lichens: *Cetraria islandica* (L.) Ach, *Cladonia mitis* Sandst. (syn. C. arbuscula subsp. mitis (Sandst.) Ruoss), *Cladonia fimbriata* (L.) Fr., *Peltigera canina* (L.) Willd.
Mosses: *Hypnum lacunosum* (Brid.) Hoffm. ex Brid. (syn. H. cupressiforme var. lacunosum Brid.), *Pseudoleskea incurvata* (Hedw.) Loeske (syn. Leskuraea incurvata (Hedw.) Lawton)
– uncovered soil (cover 1.2%):
– physico-chemical factors, plant and stone density:
T_{MAX} 22.08°C, T_{MEAN} 8.55°C, F (moisture) 4.45, N (nutrients) 2.67, R (Ca^{++}) 4.25, M 7, PD 244, S 1.5
No temperature measurement possible. Estimated by cross-referencing with similar habitats under consideration of geographic situation, orography and climate change.

Ant species		nests / 100 m²
Myrmica lobulicornis		17.14
Formica lemani		2.45
Leptothorax acervorum		2.04
Myrmica ruginodis	4.	0.82
total		22.45

Species richness index S_{100} 3.88 species / 100 m².

SP 219: Alpine Viehweide Kühtai N-exponiert

Habitat type: alpine cattle pasture
Date of investigation: 26 July 2012 (M. Krahl, B. Seifert, H.C. Wagner)
Situation: Kühtai-1.7 km ENE, 47.21959°N, 11.04562°E, 1964 m
Plot size: S-area 57.2 m², habitat size: 170 m²
Orography (slope and orientation of surface): azimuth 180° (= N), slope 21°
Soil conditions: Upper 8 cm of Ah horizon with a very solid and dense root felt over > 25 cm humous mountain loam (Berglehm) with coarse rubble over a bedrock of gneiss.
Comments: Open grassy patch within a *Rhododendron* scrub, cattle and horse pasture, 5 cowpats / 100 m² covering 0.2% of surface. Single large blocks of gneiss. Situated at the foot of a 33°-inclined northern slope but there is no skyline shading from 15 March to 30 September.
Vegetation:
– herb layer (cover 98%, mean height 2.5 cm):
Alchemilla fissa, *Campanula barbata*, *Campanula scheuchzeri*, *Carlina acaulis*, *Cirsium spinosissimum*, *Crepis aurea*, *Deschampsia caespitosa*, *Festuca nigrescens*, *Geum montanum*, *Homogyne alpina*, *Juniperus communis alpina*, *Leontodon helveticus*, *Leontodon hispidus*, *Leucanthemopsis alpina*, *Lotus corniculatus*, *Lotus corniculatus* var. *alpinus*, *Luzula alpina*, *Persicaria bistorta*, *Phleum rhaeticum*, *Poa alpina*, *Potentilla aurea*, *Potentilla erecta*, *Rhododendron ferrugineum*, *Selaginella selaginoides*, *Silene aucaulis*, *Silene vulgaris* ssp. *vulgaris*, *Vaccinium uliginosum*
– moss and lichen layer (cover 0.1%, 1 cm)
Lichens: *Cetraria islandica* (L.) Ach, *Cladonia mitis* Sandst. (syn. C. arbuscula subsp. mitis (Sandst.) Ruoss). Mosses: *Dicranum scoparium* Hedw., *Polytrichum perigoniale* Michx., *Barbilophozia barbata* (Schreb.) Loeske.
– litter layer (cover 5%, 2 cm):
appressed, dead grass
– dead wood on ground (cover 0.3%):
branches 1.5-3 cm thick, one lying spruce stem of 20 cm diameter
– uncovered soil (cover 0%, rocks and blocks 0.6%):
– physico-chemical factors, plant and stone density:
T_{MAX} 20.42°C, T_{MEAN} 8.52°C, F (moisture) 4.96, N (nutrients) 3.15, R (Ca^{++}) 4.17, M 5, PD 245, S 1.5

Ant species		nests / 100 m²
Formica lemani		16.61
Myrmica lobulicornis		13.99
Leptothorax acervorum	3.	9.62
total		40.22

Species richness index S_{100} 3.37 species / 100 m². *M. lobulicornis* nests typically found in grass tussocks with up to 7 cm high hillocks of fine plant particles built by the ants.

SP 220: Viehweide Walderalm

Habitat type: subalpine cattle pasture
Date of investigation: 27 July 2012 (M. Krahl, B. Seifert)
Situation: Gnadenwald-2.1 km NE, 47.33660°N, 11.57080°E, 1632 m
Plot size: S-area 42.4 m²,Q-area 51.91 m², habitat size: 1500 m²
Orography (slope and orientation of surface): azimuth 317° (= SE), slope 19°
Soil conditions: 13 cm Ah horizon above 10 cm humous mountain loess to mountain loam which contains coarse rubble beginning with 22 cm depth. On the surface few stones with a mean area of 300 cm². The bedrock is a hard limestone.
Comments: comparably extensive cattle pasture, 0.5 cowpats / 100 m² that cover 0.02% of surface. Three old spruce grow outside the plot 14 m WNW, 12 m SSW and 8 m E from the centre of the plot. The spruce in SSW generates a shading of the plot beginning from 14:00 h solar time.
Vegetation:
– tree layer (cover in vertical projection 0%, the very old spruce outside the plot with a height of 25 m and diameter breast height 60-100 cm generate a partial shading even in high summer):
Picea abies
– herb layer (cover 100%, mean height 7.5 cm):
Agrostis cf. *capillaris*, *Alchemilla* sect. *coriacea*, *Briza media*, *Campanula scheuchzeri*, *Carduus defloratus* s.l., *Carex flacca*, *Carex pallescens*, *Carlina acaulis*, *Carum carvi*, *Brachypodium* cf. *rupestre*,*Festuca nigrescens*, *Galium anisophyllon*, *Hieracium pilosella*, *Leontodon hispidus*, *Lotus corniculatus*, *Melampyrum sylvaticum*, *Phyteuma orbiculare*, *Picea abies*, *Plantago lanceolata*, *Poa pratensis*, *Potentilla erecta*, *Prunella vulgaris*, *Trifolium pratense*, *Vaccinium myrtillus*, *Veronica officinalis*
– moss and lichen layer (cover 0.1%)
– dead wood on ground (cover 0.2%):
two rotten, 10 cm thick spruce branches
– physico-chemical factors, plant and stone density:
T_{MAX} 19.94°C, T_{MEAN} 10.12°C, F (moisture) 4.82, N (nutrients) 3.19, R (Ca^{++}) 5.00, M 5, PD 750, S 0.12

Ant species	nests / 100 m²
Myrmica scabrinodis	192.64
Leptothorax acervorum	5.89
Formica lemani	3.85
Myrmica ruginodis 4.	3.85
total	206.23

Species richness index S_{100} 4.59 species / 100 m²

SP 221: Alpine Waldweide Martelltal

Habitat type: subalpine forest pasture
Date of investigation: 10 August 2012 (B. Balkenhol, J. Balkenhol, B. Seifert)
Situation: Martell-Dorf-1.7 km WSW, 46.54820°N, 10.76034°E, 1948 m
Plot size: S-area 31.55 m², Q-area 7500 m², habitat size: 8 ha
Orography (slope and orientation of surface): azimuth 294° (= ESE), slope 21°
Soil conditions: 1 cm needle litter, then 4 cm mull, then 5 cm humous mountain loam, then mountain loam with fine rubble and blocks. Bedrock phyllitic gneiss and quartz phyllite. Blocks of 20-50 cm diameter at soil surface.
Comments: forest pasture by cattle in low intensity, 0.2 cowpats/ 100 m². Weak sheep grazing.
Vegetation:
– tree layer: cover 55%, mean height 20 m [8-25 m], diameter breast height 15-70 cm, mean distance of stems 8.7 m):
Picea abies, Pinus cembra and *Larix decidua* in proportions of 3 : 3 : 1
– shrub layer (cover 1%, mean height 2 m):
Larix decidua, Picea abies, Pinus cembra
– herb layer (cover 25%, mean height 7 cm):
Anthoxanthum odoratum, *Deschampsia flexuosa*, *Euphrasia minima*,*Festuca nigrescens*, *Hieracium murorum*, *Larix decidua*, *Luzula luzuloides*, *Maianthemum bifolium*, *Melampyrum sylvaticum*, *Picea abies*, *Pinus cembra*, *Vaccinium myrtillus*, *Vaccinium vitis-idaea*, *Veronica officinalis*

– moss and lichen layer (cover 30%, mean height 3 cm)
Lichens: *Pseudevernia furfuracea* (L.) Zopf, *Cladonia pyxidata* (L.) Hoffm., *Parmelia saxatilis* (L.) Ach., *Vulpicida pinastri* (Scop.) J.-E. Mattsson, *Hypogymnia physodes* (L.) Nyl., *Evernia divaricata* (L.) Ach., *Peltigera leucophlebia* (Nyl.) Gyeln., *Cladonia digitata* (L.) Hoffm., *Usnea scabrata* Nyl. (syn. U. barbata (L.) F. H. Wigg.), *Usnea diplotypus* Vain., *Umbilicaria deusta* (L.) Baumg.
Mosses: *Pleurozium schreberi* (Brid.) Mitt., *Dicranum montanum* Hedw. (syn. Orthodicranum montanum (Hedw.) Loeske*, Dicranum scoparium* Hedw., *Lophozia longidens* (Lindb.) Macoun
– litter layer (cover 35%, 1 cm needle litter):
– dead wood on ground (cover 1%):
– physico-chemical factors, plant and stone density:
T_{MAX} 15.54°C, T_{MEAN} 9.01°C, F (moisture) 4.72, N (nutrients) 2.75, R (Ca^{++}) 2.96, M 4, PD 210, S 0.80

Ant species	nests / 100 m²
Formica aquilonia	0.12
Formica lemani	0.04
Camponotus herculeanus	0.03
Myrmica ruginodis 4.	0.01
total	0.20

Species richness index S_{100}: 0.20 species / 100 m². *C. herculeanus* at two of 100 investigated trees. Density assessment of *F. lemani* relative to *C. herculeanus*. The *F. aquilonia* nests have a rather low mean nest population (perhaps 200 000 workers per nest).

SP 222: Alpine Weide Alp Flix

Habitat type: alpine pasture
Date of investigation: 14 August 2012 (B. Balkenhol, J. Balkenhol, B. Seifert)
Situation: Sur – 3.1 km E, 46.52066°N, 9.67187°E, 2382 m
Plot size: S-area 200 m², Q-area 0 m², habitat size: 700 m²
Orography (slope and orientation of surface): azimuth 135° (= NW), slope 2°
Soil conditions: 6 cm Ah horizon with a dense root felt above brown mountain loam (Berglehm) with 60% rubble of 5-6 cm diameter. Few, usually sunken, stones of 5-20 cm diameter at soil surface. Bedrock: granite.
Comments: very even, almost horizontal plane west of a block field. Cattle and sheep pasture, 1.0 cowpats/100 m².
Vegetation:
– herb layer (cover 98%, mean height 4 cm):
Alchemilla cf. *monticola*, *Anthoxanthum odoratum*, *Avenochloa versicolor*, *Campanula* cf. *rotundifolia*, *Campanula scheuchzeri*, *Cerastium arvense* ssp. *strictum*,*Deschampsia cespitosa*, *Euphrasia minima*, *Gentiana nivalis*, *Gentiana verna*, *Geum montanum*, *Hieracium angustifolium*, *Leontodon* cf. *hispidus*, *Leucanthemopsis alpina*, *Lotus corniculatus*, *Lotus corniculatus* var. *alpinus*, *Luzula spicata*, *Nardus stricta*, *Phleum rhaeticum*, *Plantago alpina*, *Poa alpina*, *Poa pratensis*, *Potentilla aurea*, *Ranunculus montanus* s.l., *Ranunculus villarsii*, *Scorzoneroides helvetica*, *Sempervivum montanum*, *Trifolium badium*
[marginal, along the creek, not really belonging to the plot: *Cirsium spinosissimum, Acontitum napellus*]
– moss and lichen layer (cover 1.2%, 0.5 cm)
Lichens: *Cetraria islandica* (L.) Ach, *Cladonia macroceras* (Delise) Ahti, *Stereocaulon alpinum* Laurer, *Cladonia symphycarpia* (Flörke) Fr., *Cladonia pyxidata* (L.) Hoffm., *Cladonia mitis* Sandst. (syn. C. arbuscula subsp. mitis (Sandst.) Ruoss). Mosses: *Polytrichum juniperinum* Hedw., *Bryum turbinatum* (Hedw.) Turner, *Tortula ruralis* (Hedw.) P. Gaertn. et al., *Pottiacea* indet.
– physico-chemical factors, plant and stone density:
T_{MAX} 16.85°C, T_{MEAN} 5.69°C, F (moisture) 4.68, N (nutrients) 2.77, R (Ca^{++}) 4.32, M 5, PD 392, S 1.83

Ant species	nests / 100 m²
Myrmica lobulicornis	1.00
Formica lemani 2.	0.50
total	1.50

Species richness index S_{100} : 1.76 species / 100 m².

SP 223: Kippe Hühnerwasser Plot C6

Habitat type: free plant succession on dry heaped soil

Date of investigation: 15 May 2013 (Nadine Herzog, R. Schultz, B. Seifert)
Situation: Jehserig-3.5 km SSE, 51.60603°N, 14.26593°E, 137.7 m NN
Plot size: S-area 70.28 m², Q-area 124.8 m², habitat size: 2200 m²
Orography (slope and orientation of surface): azimuth 0° (= S), slope 1°
Soil conditions: Coarse to fine sand without Ah horizon, unfixed. Analysis 2005 [%]: skelett 14.9, fine 85.1. Fine fraction subdivided in coarse sand 10.6, medium-grained sand 49.4, fine sand 25.8, silt 8.4, clay 5.6, pH 7.72
Comments: nutrient-poor heaped material of 3 m thickness over a barrier layer of clay, dumped in 2005 and draining towards SE. C, N and S content very low.
Vegetation:
– herb layer 15 May 2013: cover 33% (including *Genista* 35%), mean height 5 cm (including *Genista* 5.9 cm), 16 June 2013: cover 39% (including *Genista* 41%), mean height 13 cm, including *Genista* 13.5 cm):
Recording of July 2012: *Achillea pannonica*, *Agrostis capillaris*, *Agostis stolonifera*, *Ajuga genevensis*, *Apera spica-ventri*, *Arenaria serpyllifolia*, *Brachypodium sylvaticum*, *Bromus hordeaceus*, *Bromus tectorum*, *Calamagrostis epigejos*, *Carex ericetorum*, *Cerastium holosteoides*, *Cerastium pumilum*, *Cirsium arvense*, *Conyza canadensis*, *Corynephorus canescens*, *Crepis foetida*, *Crepis tectorum*, *Daucus carota*, *Digitaria sanguinalis*, *Echium vulgare*, *Epilobium tetragonum*, *Festuca ovina* aggr., *Festuca rubra* aggr., *Filago arvensis*, *Filago minima*, *Genista pilosa* (15 May 2013: three large, dense plant patches covering alltogether 2.44 m² = 3.47% of area), *Helichrysum arenarium*, *Hieracium pilosella*, *Holcus lanatus*, *Hypochoeris radicata*, *Leontodon autumnalis*, *Leontodon taraxoides*, *Oenothera parviflora*, *Plantago lanceolata*, *Petrorhagia polifera*, *Poa palustris*, *Potentilla argentea*, *Prunella vulgaris*, *Rumex acetosella tenuifolia*, *Taraxacum officinale* agg., *Tragopogon dubius*, *Trifolium arvense*, *Trifolium dubium*, *Vicia hirsuta*
– moss and lichen layer (cover 58%, 0.8 cm, crusty, hard)
Polytrichum piliferum, *Ceratodon purpureus*
– litter layer (outside *Genista* cover 2.6%, 1 mm, below *Genista* 90%, 15 mm, total 5.6% 1.5 mm):
– dead wood on ground (cover 0.05%):
few rotten branches from the heaped material
– uncovered soil (cover 6%):
– physico-chemical factors, plant and stone density:
T_{MAX} 29.04°C, T_{MEAN} 17.92°C, F (moisture) 3.90, N (nutrients) 3.61, R (Ca^{++}) 4.76, M 2, PD 472, S 0.33

Ant species	nests / 100 m²
Tetramorium caespitum	36.09
Lasius niger	12.29
Formica clara	1.78
Formica sanguinea 4.	1.02
total	51.18

Species richness index S_{100} 3.91 species / 100 m².

SP 224: Kippe Hühnerwasser Plot I6

Habitat type: free plant succession on dry heaped soil
Date of investigation: 24 May 2013 (Nadine Herzog, R. Schultz, B. Seifert)
Situation: Jehserig-3.7 km SSE, 51.60518°N, 14.26687°E, 134.7 m NN
Plot size: S-area 66.68 m², Q-area 139.67 m², habitat size: 300 m²
Orography (slope and orientation of surface): azimuth 7° (= S), slope 2°
Soil conditions: heaped material; little or not cohesive, mixture of coarse and fine sand, with little silt; Ah horizon absent. Analysis 2005 [%]: skelett 13.1, fine 86.9. Fine fraction subdivided in coarse sand 11.8, medium-grained sand 51.9, fine sand 23.6, silt 7.1, clay 5.5, pH 7.42
Comments: nutrient-poor, heaped material of 3 m thickness over a barrier layer of clay, dumped in 2005 and draining towards SE. C, N and S content very low.
Vegetation:
– herb layer (cover 19.6%, mean height 7 cm am 24 May 2013, 19 June 27% and 13 cm)
Recording of summer 2012: *Achillea pannonica*, *Agrostis capillaris*, *Apera spica-venti*, *Bromus tectorum*, *Carex ericetorum*, *Cerastium holosteoides*, *Cirsium arvense*, *Cirsium vulgare*, *Convolvulus arvensis*, *Conyza canadensis*, *Corynephorus canescens*, *Crepis foetida*, *Daucus carota*, *Echium vulgare*, *Festuca rubra* aggr., *Filago arvensis*, *Helichrysum arenarium*, *Herniaria glabra*, *Leontddon taraxoides*, *Lepidium ruderale*, *Petrorhagia prolifera*, *Poa compressa*, *Potentilla argentea*, *Prunella vulgaris*, *Robinia pseudacacia*, *Rumex acetosella tenuifolius*, *Scleranthus annuus* aggr., *Setaria pumila*, *Tragopogon dubius*, *Trifolium arvense*, *Tussilago farfara*

– moss and lichen layer (cover 77%, 5 mm)
Polytrichum piliferum, *Ceratodon purpureus*, *Cladonia* spec., *Physcia* (probably *tenella* or *Ph. adscendens*)
– litter layer (2%, 3 mm):
– dead wood on ground (cover 0.05%):
few rotten branches from the heaped material
– uncovered soil (cover 3%):
largely through sand ejections by the ants and less by other animals
– physico-chemical factors, plant and stone density:
T_{MAX} 31.00°C, T_{MEAN} 18.43°C, F (moisture) 3.77, N (nutrients) 3.77, R (Ca^{++}) 4.86, M 2, PD 351, S 0.24

Ant species	nests / 100 m²
Tetramorium caespitum	31.87
Lasius niger	19.68
Formica sanguinea	1.07
Lasius psammophilus	0.95
Formica clara 5.	0.36
total	53.93

Species richness index S_{100} 4.06 species / 100 m².

SP 225: Hühnerwasser, Phragmites, Plot P1

Habitat type: Phragmites stand on moist heaped material
Date of investigation: 24 May 2013 (Nadine Herzog, R. Schultz, B. Seifert)
Situation: Jehserig-3.8 km SSE, 51.60364°N, 14.26706°E, 128.5 m NN
Plot size: S-area 54.28 m², habitat size: 400 m²
Orography (slope and orientation of surface): azimuth 233°(= NE), slope 7°
Soil conditions: fine sand of homogenous grain size with much silt, fully coherent (ideal „cake tin sand"). Ah horizon absent. Moister than SP 223 and SP 224. Analysis 2005 [%]: skelett 0.5, fine 99.5. Fine fraction subdivided in coarse sand 3.8, medium-grained sand 13.2, fine sand 64.2, silt 14.8, clay 3.9, pH 8.32
Comments: nutrient-poor,heaped material of 3 m thickness over a barrier layer of clay, dumped in 2005. C, N and S content very low.
Vegetation:
– herb layer (cover 9.4% and mean height 30 cm 24 May 2013, 19% and 50 cm 19 June 2013)
Recording of July 2012: *Agrostis capillaris*, *Agrostis vinealis*, *Apera spica-venti*, *Arenaria serpyllifolia*, *Artemisia vulgaris*, *Betula pendula* (20-60 cm high), *Bromus tectorum*, *Calamagrostis epigejos*, *Cerastium holosteoides*, *Cirsium arvense*, *Conyza canadensis*, *Corynephorus canescens*, *Crepis tectorum*, *Danthonia decumbens*, *Digitaria sanguinalis*, *Echium vulgare*, *Epilobium tetragonum*, *Hypochoeris radicata*, *Oenothera parviflora*, *Petrorhagia prolifera*, *Pinus silvestris* (2 specimens 70 cm high), *Poa compressa*, *Populus tremula*, *Potentilla argentea*, *Phragmites australis*, *Plantago major intermedia*, *Prunella vulgaris*, *Prunus serotina*, *Rumex acetosella tenuifolius*, *Salix caprea*, *Senecio viscosus*, *Setaria pumila*, *Solidago canadensis*, *Taraxacum officinale*, *Trifolium arvense*, *Tripleurospermum maritimum*, *Tussilago farfara*, *Veronica officinalis*, *Vicia tetrasperma* aggr.
– moss and lichen layer (cover 78%, 3 mm)
Ceratodon purpureus, *Peltigera didaclyla* (With.) J. R. Laundon, and *Cladonia* spec.
– litter layer (8%, 3 mm):
Phragmites leafes and stems
– uncovered soil (cover 5%):
largely through sand ejections by the ants and less by other animals
– physico-chemical factors, plant and stone density:
T_{MAX} 29.40°C, T_{MEAN} 18.06°C, F (moisture) 4.21, N (nutrients) 4.27, R (Ca^{++}) 4.64, M 2, PD 564, S 0

Ant species	nests / 100 m²
Lasius niger	23.95
Tetramorium caespitum	16.58
Manica rubida 3	9.21
total	49.74

Species richness index S_{100} 3.41 species / 100 m².

SP 226: Hühnerwasser, Calamagrostis, Plot C3

Habitat type: Calamagrostis stand on dry heaped material
Date of investigation: 19 June 2013 (N. Herzog, M. Krahl, B. Seifert)
Situation: Jehserig-4.0 km SSE, 51.60568°N, 14.26509°E, 137.5 m
Plot size: S-area 64.40 m², Q-area 116.80 m²
Orography (slope and orientation of surface): azimuth 0°, slope 0°
Soil conditions: strongly silty, clayey sand, Ah horizon absent. Analysis 2005 [%]: skelett 19.4, fine 80.6. Fine fraction subdivided in coarse sand 10.5, medium-grained sand 43.2, fine sand 24.0, silt 13.9, clay 8.1, pH 8.08
Comments: nutrient-poor, heaped material of 3 m thickness over a barrier layer of clay, dumped in 2005, drainage towards SE. C, N and S content very low.
Vegetation:
– herb layer cover 16%, mean height 20 cm):
Recording of July 2012: *Achillea pannonica*, *Agrostis capillaris*, *Agrostis vinealis*, *Apera spica-venti*, *Arenaria serpyllifolia*, *Bromus tectorum*, *Calamagrostis epigejos*, *Centaurea stoebe*, *Cerastium holosteoides*, *Cirsium arvense*, *Conyza canadensis*, *Corynephorus canescens*, *Crepis foetida*, *Crepis tectorum*, *Danthonia decumbens*, *Daucus carota*, *Echium vulgare*, *Filago arvensis*, *Hieracium pilosella*, *Hypochoeris radicata*, *Leontodon autumnalis*, *Leontodon taraxacoides*, *Oenothera parviflora*, *Poa compressa*, *Poa palustris*, *Prunella vulgaris*, *Rumex acetosella tenuifolius*, *Silena alba alba*, *Taraxacum officinale*, *Tragopogon dubius*, *Trifolium arvense*, *Trifolium dubium*, *Vicia tetrasperma*
– moss and lichen layer (cover 80%, 1 cm)
– litter layer (43%, 10 mm):
dead *Calamagrostis*
– uncovered soil (cover 1.8%):
– physico-chemical factors, plant and stone density:
T_{MAX} 26.34°C, T_{MEAN} 17.23°C, F (moisture) 3.97, N (nutrients) 3.90, R (Ca^{++}) 4.90, M 2, PD 320, S 0.10

Ant species	nests / 100 m²
Tetramorium caespitum	27.58
Lasius niger	13.31
Lasius psammophilus	3.80
Myrmica specioides	1.90
Formica cinerea	0.86
Formica sanguinea	0.43
Formica clara 7.	0.43
total	48.31

Species richness index S_{100} 5.66 species / 100 m².

SP 227: Großer Garten, Scherrrasen unter Eichen

Habitat type: clip (trimmed) lawn with big oaks in a city park
Date of investigation: Canopy: 14 April, 13 May, 23 May and 10 June 2014 through rope climbing by P. Fiedler. Epigaean fauna: 11 May 2015 by A. Finke, M. Krahl, B. Seifert.
Situation: 1.4 km SE of the centre of Dresden, centre of the plot 51.04241°N, 13.75365°E, 117 m NN. The plot extends 39 m in north-south and 20 m in west-east direction.
Plot size: S-area 51.8 m², Q-area 660 m², habitat size: 660 m² below the vertical projection of the three oak canopies but certainly 20 ha in the whole park.
Orography (slope and orientation of surface): azimuth 0°, slope 0°
Soil conditions: Mixture of anthropogenous soil deposits in settlement area. Hortisol above brown soil composed of heaped loam above a heaped fine gravel-sand horizon. Weakly moist, fresh to moderately fresh and base rich. Soil with Ap/Ex/(Ex-)C profile and increased organic matter in the Ap horizon. Ah horizon very thick through a long lasting horticulture since the foundation of the garden in the year 1676.
Comments: Regularly cut lawn with strong surface compaction below three large oaks in a public city park. Lawn mowed in 14-days intervals by heavy machines . Tree litter is removed by gardeners each year. Acorns and dead twigs on soil surface almost completely absent. Big mechanical stress by visitors, picknick parties and fans of a big German football club which urinate herer after the end of matches. Soil surface almost without direct exposure to sunlight from May to October (only during very low position of sun). Exchange of air with adjacent open park areas.
Vegetation:
– tree layer (cover 90%, mean height 25 m, mean canopy diameter 18.3 m, mean age 120 years, mean diameter breast height 94 cm):
3 *Quercus robur*

– herb layer (cover 85%, mean height 5 cm): det. K. Wesche, B. Seifert
Poa annua, *Dactylis polygama*, *Glechoma hederacea*, *Bellis perennis*, *Plantago major*, *Taraxacum officinale*, *Trifolium pratense*, *Veronica chamaedrys*, *Veronica filiformis*, *Veronica arvensis*, *Ficaria verna*, *Capsela bursa-pastoris*
– moss and lichen layer (cover 0.01%, 0.5 cm, only on bark of the trunk foot): det V. Otte
Parmelia sulcata, *Punctelia subrudecta*, *Amblystegium serpens*, *Hypnum cupressiforme*, *Ceratodon purpureus*
– litter layer (0.1%, 1 mm):
very few not removed cuttings
– dead wood on ground (cover 0.01%):
very few small pieces of branches
– uncovered soil (cover 5% over all 660 m²):
larger patches at the foots of the oak trunks:
– physico-chemical factors, plant and stone density:
T_{MAX} 17.67°C, T_{MEAN} 15.40°C, F (moisture) 4.62, N (nutrients) 6.40, R (Ca^{++}) 5.12, M 6, PD 425, S 0

Ant species	Density [nests / 100 m²]	Number of nests			
		Lawn S-area 51.8 m²	Stem bases 4 m²	*Myrmica* foragers	Sum
Myrmica rubra	9.85	6	0	43=72.9%	6
Lasius flavus	7.72	4	0		4
Lasius niger	1.93	1	0		1
Myrmica rugulosa	1.38*	x	x	6=10.2%	0
Myrmica sabuleti	1.15	1	0	5=8.5%	1
Myrmica specioides	1.15*	x	x	5=8.5%	0
Temnothorax crassispinus	0.61	0	4		4
Lasius brunneus	0.45	0	3		3
Temothorax saxonicus	0.24*	0	(1.6)*		(1.6)*
Temothorax affinis	0.20*	0	(1.3)*		(1.3)*
Dolichod. quadripunctatus	0.15*	x	(1)*		(1)*
Leptothorax gredleri	0.03*	0	(0.2)*		(0.2)*
Sum	24.86	12	11	59	21.1

*nests not found in the plot, density estimate from forager numbers relative to forager number of congeners with nests found
Epigaean species richness S_{100} : 6.27 species /100 m².
The combined influence of strong shading and mechanical stress on topsoil results in an ant density achieving only 25% of the value typical for open clip lawns. The yearly removal of acorns and dead twigs forces epigaean *Temnothorax*-species to select nest sites in bark of the tree bases.

Baiting in the canopy by P. Fiedler 2014 (32 baits in 4.3-19.4 m height, 6 baits in 1.2-2.0 m height): *T. saxonicus* 22 workers at 5 baits in 5.7 and 12.1 m, *T. corticalis* 73 workers at 19 baits between 4.1 and 17.1 m, *T. affinis* 43 workers at 9 baits between 2.0 and 19.4 m, *D. quadripunctatus* 8 workers at 5 baits between 6.0–12.4 m, *L. brunneus* 169 workers at 25 baits between 1.2–17.1 m. Bait at lower stem in heights of 1 to 2 m were only visited by *L. brunneus* the nests of which were found in the stem bases of all three oaks. Foragers of the few ground-nesting *Temnothorax* did not ascend the tree trunks. The strong canopy-nesting populations of the three *Temnothorax* species did not descend to the ground (Seifert et al. 2016).

SP 228: Pillnitz Englischer Garten Di5

Habitat type: grassland under oaks in a semi-natural park
Date of investigation: Canopy: 19 August 2014 through rope climbing by P. Fiedler. Epigaean fauna: 28 May 2015 by M. Krahl, B. Seifert, R. Schultz.
Situation: Schloss Pillnitz-0.4 km N, 51.01191°N,13.86929°E, 120 m
Plot size: S-area 27.41 m², habitat size: 3 ha
Orography (slope and orientation of surface): azimuth 0°, slope 0°
Soil conditions: Loose, not condensed topsoil. Well drained gley-vega with floodplain sand, low base content and a more than 40 cm deep profile of aAh/aM,aM-Go/aGr (Sponagel 2005).
Comments: Park on former arable land, founded in 1778, total area about 3 ha. Plot situated below an oak having 180 cm diameter breast-height, 30 m height and 25 m canopy diameter. Concluded

from age of tree saplings on ground, not mowed for at least three years. Litter not removed by gardeners.
Vegetation:
– tree layer (cover 73%, height 30 m, diameter breast height 180 cm):
Quercus robur
– shrub layer (cover 15%, mean height 2 m):
Cornus spec., *Sorbus aucuparia*
– herb layer (cover 85%, mean height 25 cm):
Hedera helix, *Oxalis acetosella*, *Rumex acetosella*, *Dactylis glomerata*, *Urtica dioica*, *Anemone nemorosa*, *Carpinus betulus*, *Quercus robur*, *Trifolium pratense*, *Veronica chamaedrys*, *Acer platanoides*, *Acer pseudoplatanus*, *Tilia cordata*, *Corylus avellana*, *Taxus baccata*, *Lamium album*, *Ficaria verna*, *Bellis perennis*, *Avenella flexuosa*, *Lysimachia nummularia*, *Anthriscus sylvestris*, *Geum urbanum*, *Campanula rotundifolia*, *Vicia sepium*, *Poa trivialis*, *Ranunculus repens*, *Myosotis sylvatica*, *Hieracium murorum* aggr.
– moss and lichen layer (cover 2%, 1 cm)
mainly on the bark of the basal oak stem.
– litter layer (5%, 1 cm):
More acorns than leaf litter. The latter is effectively removed by the abundant earthworms.
– dead wood on ground (cover 0.1%):
few dead twigs
– uncovered soil (cover 8%):
– physico-chemical factors, plant and stone density:
T_{MAX} 18.23°C, T_{MEAN} 15.53°C, F (moisture) 5.42, N (nutrients) 5.82, R (Ca^{++}) 5.00, M 2, PD 2125, S 0

Ant species	nests / 100 m²
Temnothorax crassispinus	36.48
Myrmica ruginodis	18.24
Myrmica rubra	18.24
Lasius brunneus	3.65
Lasius niger 5.	x
total	76.61

Species richness index S_{100} 5.37 species / 100 m².
Baiting in the canopy by P. Fiedler 2014 (28 baits in 6.4-20.4 m, 4 baits in 2.0-2.2 m height)
T. saxonicus 1 worker at 1 bait in 16.4 m height, *T. corticalis* 7 workers at 4 baits between 13.4 and 18.4 m, *T. affinis* 7 workers an 4 baits between 8.1 and 18.4 m, *L. brunneus* 9 workers at 2 baits between 6.4 and 13.4 m height (Seifert et al. 2016).

SP 229: Englischer Garten Pillnitz Df7

Habitat type: grassland under oaks in a semi-natural park
Date of investigation: Canopy: 22 August 2014 through rope climbing by P. Fiedler. Epigaean fauna: 28 May 2015 by M. Krahl, B. Seifert, R. Schultz.
Situation: Schloss Pillnitz-0.4 km N, 51.01131°N, 13.86880°E, 119 m
Plot size: S-area 36.12 m², habitat size: 3 ha
Orography (slope and orientation of surface): azimuth 90° (= W), slope 2°
Soil conditions: Loose, not condensed topsoil. Well drained gley-vega with floodplain sand, low base content and a more than 4 dm deep profile of aAh/aM,aM-Go/aGr (Sponagel 2005).
Comments: Park on former arable land, founded in 1778, total area about 3 ha. Plot situated below an oak having 105 cm diameter breast-height, 32 m height and 18 m canopy diameter. No yearly removal of litter by gardeners. A little moister than SP 228.
Vegetation:
– tree layer (cover 72%, mean height 32 m, diameter breast height 105 cm):
Quercus robur
– herb layer (cover 95%, mean height 35 cm):
Oxalis acetosella, *Rumex acetosella*, *Dactylis glomerata*, *Urtica dioica*, *Anemone nemorosa*, *Quercus robur*, *Trifolium pratense*, *Ficaria verna*, *Bellis perennis*, *Avenella flexuosa*, *Lysimachia nummularia*, *Cardamine pratensis*, *Lamium album*, *Anthriscus sylvestris*, *Vicia sepium*, *Poa trivialis*, *Hieracium murorum* aggr., *Holcus lanatus*, *Luzula luzuloides*, *Milium effusum*, *Poa trivialis*
– moss and lichen layer (cover 5%, 2 cm)
Rhytidiadelphus squarrosus
– litter layer (5%, 1 cm):

More acorns than leaf litter. Acorns rotting. Leaf litter is effectively removed by the abundant earthworms.
– dead wood on ground (cover 0.2%):
few pieces of thin twigs
– uncovered soil (cover 1%):
– physico-chemical factors, plant and stone density:
T_{MAX} 17.83°C, T_{MEAN} 15.43°C, F (moisture) 5.50, N (nutrients) 5.81, R (Ca^{++}) 4.60, M 2, PD 3325, S 0

Ant species	nests / 100 m²
Myrmica ruginodis	16.61
Lasius niger	5.54
Myrmica rubra	2.77
Myrmica sabuleti	2.77
Lasius brunneus	2.77
Formica fusca 6.	0.00
total	30.46

Species richness index S_{100} 6.25 species / 100 m².
Baiting in the canopy by P. Fiedler 2014 (28 baits 6.4-20.4 m, 4 baits 2.0-2.2 m heigt)
T. saxonicus 2 workers at 1 bait in 19.4 m and *T. affinis* 1 worker at 1 bait in 20.4 m height (Seifert et al. 2016).

SP 230: Esslingen, Grasdach

Habitat type: sod roof on a heated building in a cemetery
Date of investigation: 14–16 July 2015 (M. Krahl, B. Seifert)
Situation: Esslingen-2.3 km SW, 48.72827°N, 9.29495°E, 333 m
Plot size: S-area 124.15 m², habitat size: 750 m²
Orography (slope and orientation of surface): azimuth 0°, slope 0°
Soil conditions: artificial fill on a flat concrete roof. 11 cm "Systemerde“ (= tight clay enriched with humus in a mixer). Thereunder 0.6 mm system filter SF of thermally solidified polypropylene with 95 µm pore width. This foil was not damaged by ants or plant roofs during 38 years. Thereunder 18 cm polystyrene rigid foam with a drainage but also a basal, 7-cm-high back up of water. Accordingly the sod-roof will dry up after rainfalls rather slowly and is more similar to the conditions of a mesoxerophytic grassland. The clay in the upper layer becomes adamant after drying and swells when becoming wet. The ants cannot evade severe frosts by moving to a depth larger than 11 cm but this is apparently meaningless because the rooms below the sod roof are sufficiently heated in winter.
Comments: sod roof founded in 1977 without subsequent replanting. Investigated were only areas not shaded by trees.
Vegetation:
– herb layer (cover 90%, mean height 12 cm):
Sedum spurium 843, *Sedum hybridum* 694, *Sedum floriferum* 716, *Teucrium chamaedrys* 23, *Festuca glauca* 10, *Origanum vulgare* 5, *Vicia sepium* 12, *Trifolium minus* 3, *Crepis capillaris*, 28, *Thymus pulegioides pulegioides* 1, *Convolvulus arvensis* 3, *Geranium* spec., *Hieracium pilosella* 1, *Pinus sylvestris* 1, *Acer campestre* 1
– moss and lichen layer (cover 30%, 1.5 cm):
mosses: *Scleropodium purum*, *Grimmia pulvinata*, *Ceratodon purpureus.* Lichens: *Peltigera neckeri*
– litter layer (15%, 0.5 cm):
dead material of *Sedum*
– uncovered soil (cover 0.5%):
– physico-chemical factors, plant and stone density:
T_{MAX} 28.00°C, T_{MEAN} 17.64°C, F (moisture) 3.33, N (nutrients) 3.09, R (Ca^{++}) 6.40, M 2, PD 1090, S 0

Ant species	nests / 100 m²
Lasius flavus	53.96
Myrmica sabuleti	9.67
Myrmica scabrinodis	4.03
Formica cunicularia	1.61
Lasius niger	1.21
Myrmica curvithorax	0.81
Myrmica lonae	0.81
Myrmica schencki 8.	0.81

total	72.91

Species richness index S_{100} 7.68 species / 100 m².
Lasius flavus was nearly everywhere in the soil. Though usually having small-sized workers, it produced alates rather frequently. In contrast to the situation in natural habitats, *L. flavus* foraged rather often on soil surface in the morning. *L. flavus* constructed well-sized mounds the largest of which was certainly 25 years old. This species could colonize the roof as a true pioneer species apparently because *L. niger*, that usually is the domiant and typical pioneer in anthropogenous habitats, is poorly adapted to the physicalic conditions on the roof. *Formica cunicularia* had rather large workers which indicates productive colonies. All ant species, including *L. flavus*, imbibed morning dew from the smooth plastic surfaces of skylights.

SP 231: Zirmbühel, alpine Viehweide

Habitat type: alpine pasture
Date of investigation: 6 and 11 August 2015 (B. Seifert)
Situation: Martell-2.1 km W, 46.55925°N, 10.75378°E, 2381 m
Plot size: S-area 54 m², Q-area 3 ha, habitat size: 3 ha
Orography (slope and orientation of surface): azimuth 278° (= E), slope 24°
Soil conditions: Soil surface with stones and blocks of 8 to 50 cm diameter which cover 25% of surface. Weakly humous, sandy mountain loam containing 50% of coarse rubble down to at least 40 cm depth. Geological material phyllitic gneiss, quartz phyllite and also sandstone.
Comments: cattle and sheep grazing of only mean intensity but a drinking trough 35 m distant from the plot causes a higher frequency of animal movements and mechanical stress. The area is exposed to strong wind drought.
Vegetation:
– herb layer (cover 37.7%, mean height 1 cm):
Agrostis alpina, *Antennaria dioica*, *Avenula versicolor*, *Calluna vulgaris*, *Campanula barbata*, *Erigeron alpinus*, *Festuca halleri*, *Gentianella rhaetica*, *Hieracium villosum*, *Juniperus communis alpina*, *Loiseleuria procumbens* (covers 10% of surface), *Luzula alpinopilosa*, *Minuartia biflora*, *Potentilla aurea*, *Rhododendron ferrugineum*, *Sempervivum montanum*, *Senecio abrotanifolius*, *Thesium alpinum*, *Vaccinium uliginosum gaultherioides*, *Vaccinium vitis-idaea*, *Veronica bellidioide*
– moss and lichen layer (cover 31%, 0.5 cm)
Cetraria islandica
– litter layer (0%):
– uncovered soil (cover 6.5%):
– physico-chemical factors, plant and stone density:
T_{MAX} 23.74°C, T_{MEAN} 8.60°C, F (moisture) 4.48, N (nutrients) 2.43, R (Ca^{++}) 3.47, M 5, PD 54, S 3.0

Ant species	nester /100 m²
Formica lemani	38.89
Tetramorium alpestre	22.22
Leptothorax acervorum	7.41
Myrmica sulcinodis	3.70
Manica rubida	0.93
Formica lugubris 6.	0.02
total	73.17

Species richness index S_{100} 4.75 species / 100 m².

SP 232: Hühnerspiel, subalpine Viehweide

Habitat type: subalpine cattle pasture
Date of investigation: 6–8 August 2015 (B. Seifert)
Situation: Martell-2.1 km W, 46.55702°N, 10.75929°E, 2137 m
Plot size: S-area 38.48 m², g2-Fläche 700 m², habitat size: 1.5 ha
Orography (slope and orientation of surface): azimuth 290°(= ESE), slope 13°
Soil conditions: soil surface with stones and blocks of 10 bis 80 cm diameter with a cover of 13%. Topsoil 10 cm humous mountain loam over at least 50 cm weakly cohesive material mixed of mountain loam and 50% coarse rubble. Geological material phyllitic gneiss and quartz phyllite.
Comments: intensive cattle pasture on a clearing of 1.5 ha area in *Larix europaea – Pinus cembra – Picea abies* woodland.
Vegetation:
– herb layer (cover 71.2%, mean height 8.5 cm):

Achillea moschata, *Antennaria dioica*, *Anthoxanthum alpinum*, *Arnica montana*, *Avenella flexuosa*, *Calamagrostis villosa*, *Calluna vulgaris*, *Campanula barbata*, *Carlina acaulis*, *Cerastium arvense strictum*, *Cirsium arvense*, *Daphne striata*, *Deschampsia caespitosa*, *Euphrasia minima*, *Festuca halleri*, *Festuca nigrescens*, *Galium anisophyllum*, *Geranium sylvaticum*, *Geum montanum*, *Helianthemum nummularium obscurum*, *Hieracium pilosella*, *Homogyne alpina*, *Juniperus communis alpina*, *Leontodon hispidus hyoseroides*, *Luzula luzuloides*, *Phyteuma betonicifolium*, *Potentilla aurea*, *Rhododendron ferrugineum*, *Sempervivum montanum*, *Silene* (*Heliosperma*) *pusillum pusillum*, *Solidago virgaurea*, *Thymus pulegioides* s.l., *Trifolium alpinum*, *Vaccinium myrtillus*, *Vaccinium uliginosum gaultherioides*, *Vaccinium vitis-idaea*, *Veronica officinalis*, *Vaccinium* forms 20% and grasses nearly 80% of herb layer

– moss and lichen layer (cover 1.8%, 2 cm)

– litter layer (0%):

– uncovered soil (cover 12.2%):

much soil injury by cattle

– physico-chemical factors, plant and stone density:

T_{MAX} 23.64°C, T_{MEAN} 9.78°C, F (moisture) 4.71, N (nutrients) 2.58, R (Ca^{++}) 3.50, M 5, PD 605, S 0.64

Ant species	nests /100 m^2
Formica lemani	38.98
Temnothorax tuberum	23.39
Tetramorium alpestre	15.59
Myrmica lobicornis	5.20
Manica rubida	2.60
Lasius flavus	1.30
Formica exsecta 7.	0.14
total	87.2

Species richness index S_{100} 6.31 species / 100 m².

Two dealate gynes of *M. lobulicornis* and one of *M. lobicornis* walked over the ground.

References

Holec M, Frouz J 2005: Ant (Hymenoptera:Formicidae) communities in reclaimed and unreclaimed brown coal mining spoil dumps in the Czech Republic. – Pedobiologia 49: 345–357.

Nielsen MG, Skyberg N, Winther L 1976: Studies on *Lasius flavus* F. (Hymenoptera, Formicidae): I. Population density, biomass, and distribution of nests. – Entomologiske Meddelelser 44: 65-75.

Seifert B, Fiedler P, Schultz R 2016: Escape to the high canopy – thermal deficiency causes niche expansion in a forest-floor ant. – Insect Science, April 29 2016. doi: 10.1111/1744-7917.12351.

Sponagel H 2005: Bodenkundliche Kartieranleitung. – Schweizerbart, Stuttgart, 5th edition, 438 S.