

ZOFIA FLISIŃSKA

## Characteristics of the macromycetes of the reservation Łęka

Charakterystyka mikoflory (macromycetes) rezerwatu Łęka

The floristic reservation Łęka (378 ha) was established in 1998 and it is the third one within the Janów Forests Landscape Park (Sandomierz Basin). The area that it takes is almost completely flat and flooded, and the water relations are favourable for the forests of a natural tree stand. It contains much differentiated woods, riparian forests and various types of forests with the dominating fir-tree, ash-tree, spruce, beech-tree, black alder, common oak and chestnut oak. The flora of the area is also abundant, containing mountain, Atlantic and boreal species (1).

The results of mycological studies presented in the paper are an effect of three-year-long research (1996–1998) carried out before the reservation was founded.

### RESULTS

So far, 176 species of macromycetes belonging to 12 orders, 37 families and 95 genera were found (Tab. 1).

The most numerous flora of macromycetes of the reservation is represented by the following families: *Tricholomataceae*, *Polyporaceae*, *Boletaceae*, *Cortinariaceae*, *Russulaceae* and *Strophariaceae* (Fig. 1), while the most numerous genera include *Russula*, *Amanita*, *Mycena*, *Collybia*, *Lactarius*, *Leccinum* and *Xerocomus* (Fig. 2).

A number of the species found here (about 25%) deserve special attention. Some of them (*Aleurodiscus amorphus*, *Calocera cornea*, *Cortinarius bolaris*, *Geoglossum nitritum*, *Hydnum repandum*, *Hypocrea citrina*, *Inocybe lanuginosa*,

Table 1. Number of macromycetes taxons found in the Łęka reserve

Order	Family	Genus	Species
<i>Hypocreales</i>	1	1	1
<i>Helotiales</i>	2	2	2
<i>Sphaeriales</i>	1	1	2
<i>Tremellales</i>	1	3	5
<i>Dacrymycetales</i>	1	2	3
<i>Aphylophorales</i>	13	36	41
<i>Boletales</i>	3	9	20
<i>Agaricales</i>	10	33	77
<i>Russulales</i>	1	2	16
<i>Sclerodermatales</i>	1	1	2
<i>Nidulariales</i>	2	3	3
<i>Lycoperdales</i>	1	2	4
Totally	37	95	176

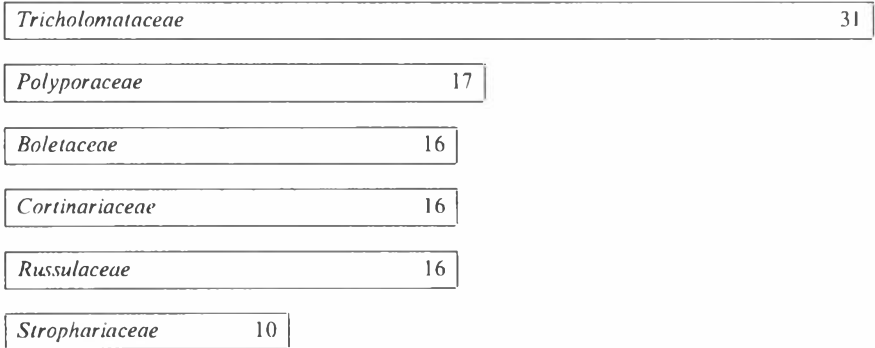


Fig. 1. The richest in species macromycetes families in the Łęka reserve

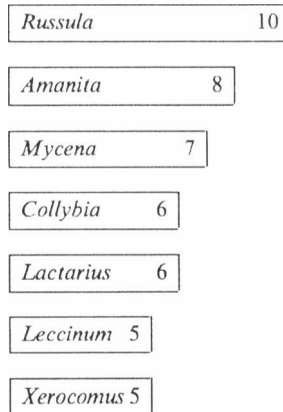


Fig. 2. The richest in species macromycetes genera found in the Łęka reserve

*Lentinellus cochleatus*, *Leucopaxillus gentianeus*, *Paxillus atrotomentosus*, *Thelephora palmata*, *Xerocomus rubellus*) are not too frequently mentioned in specialist literature. Others (21 genera) are included in a list of endangered species (6). They belong to four categories of danger: **E** (endangered) – *Hydropus atramentosus*; **V** (vulnerable) – *Amanita virosa*, *Boletus edulis*, *Hericium clathroides*, *Inonotus dryadeus*, *Leccinum holopus*, *Pleurotus pulmonarius*; **R** (rare) – *Bulgaria inquinans*, *Cystoderma cinnabarinum*, *Hymenochaete cruenta*, *Jung-huhnia nitida*, *Tricholomopsis decora*, *Xerocomus parasiticus*; **I** (indeterminate) – *Artomyces pyxidatus*, *Cantharellus cibarius*, *Galerina paludosa*, *G. sphagnorum*, *Gyroporus castaneus*, *Macrolepiota rhacodes*, *Mycena pelianthina*, *Steccherinum fimbriatum*. Two of the species mentioned here (*Hericium clathroides*, *Xerocomus parasiticus*) are included under legal protection.

In the forest communities of the Łęka reserve the proportion of over-ground fungi is the greatest (Tab. 2, Fig. 3I). They mostly live in a symbiosis with

Table 2. A list of species from particular ecological groups and orders in numbers

Order	Ecological group				Other substrates	Totally
	terrestrial		lignicolous			
	symbionts	saprotrophs	saprotrophs	parasites		
<i>Hypocreales</i>	–	–	1	–	–	1
<i>Helotiales</i>	–	1	1	–	–	2
<i>Sphaeriales</i>	–	–	2	–	–	2
<i>Tremellales</i>	–	–	5	–	–	5
<i>Dacrymycetales</i>	–	–	3	–	–	3
<i>Aphyllphorales</i>	6	2	27	5	1	41
<i>Boletales</i>	17	1	1	–	1	20
<i>Agaricales</i>	23	26	27	1	–	77
<i>Russulales</i>	16	–	–	–	–	16
<i>Gasteromycetes</i> *	–	5	4	–	–	9
	62	35	71	6	2	176
Totally	97		77		2	176

\* Included the orders: *Sclerodermateles*, *Nidulariales*, *Lycoperdales*.

different tree species (Fig. 3II). Such a life form is represented above all by the species belonging to the orders of *Agaricales*, *Boletales* and *Russulales*. Within the *Agaricales*, many species also present a saprophytic form, inhabiting different substrate of the forest litter. Xylophilous fungi (lignicolous ones), which find differentiated substrate in the reserve (a variety of tree species) are also found in considerable proportions. Saprophytes from the order *Aphyllphorales* and *Agaricales* are the dominating ones. Parasites, mainly from the order *Aphyllphorales* (5 species) are scarce and sporadic.

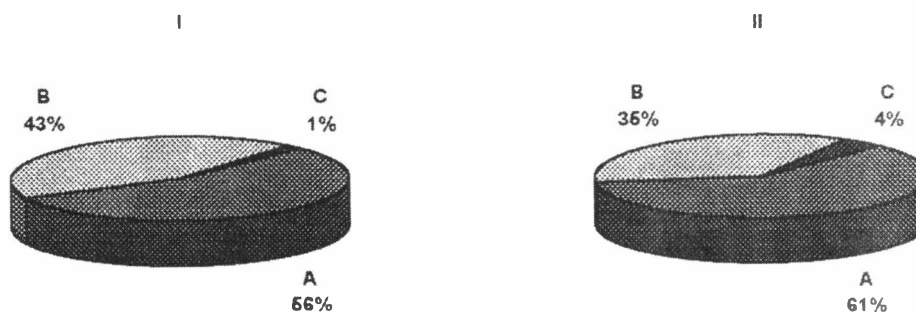


Fig. 3. Per cent share ecological groups of macromycetes in the Łęka reserve; I – as regards the substrate; A – terrestrial, B – lignicolous, C – other substrates, II – as regards the form of living; A – saprotrophs, B – symbionts, C – parasites

#### LIST OF SPECIES

The nomenclature of the majority of the species is after Jülich (4) and Moser (5).

*Pyrenomycetes*  
*Hypocreales*  
*Hypocreaceae*

*Hypocrea citrina* (Pers.: Fr.) Fr. – on stumps of *Pinus*, in moist mixed wood; IX.

*Ascomycetes*  
*Helotiales*  
*Geoglossaceae*

*Geoglossum nigratum* Cooke – among mosses, in moist mixed wood with *Abies*; VII.

*Helotiaceae*

*Bulgaria inquinans* Fr. – on beech log, in alder carr with *Fagus* (3); IX – X

*Sphaeriales*  
*Sphaeriaceae*

*Xylaria hypoxylon* (L.) Grévil. – on stumps of deciduous trees, in alder carr and hornbeam forest; VIII – X.

*X. polymorpha* (Pers.) Grév. – on stumps and fallen twigs of deciduous trees, in riparian forest, alder carr and hornbeam forest; IX-XI.

*Basidiomycetes*

*Tremellales*

*Tremellaceae*

*Exidia glandulosa* Fr. – on dead deciduous trees, in alder carr; IX-X.

*E. truncata* Fr. – on fallen twigs of *Quercus*, in hornbeam forest; VIII-X.

*Pseudohydnum gelatinosum* (Scop.: Fr.) Karst. – on stumps of coniferous trees (*Pinus*), in pine wood; VIII-X.

*Tremella encephala* Pers.: Pers. – on fallen twigs of *Pinus*, in pine wood with *Abies*; VIII-IX.

*T. mesenterica* Retz. in Hook. – on fallen twigs of deciduous trees, in alder carr with *Fagus* and in moist mixed wood; VIII-X.

*Dacrymycetales*

*Dacrymycetaceae*

*Calocera cornea* (Batsch: Fr.) Fr. – on stumps and fallen twigs of deciduous trees, in mixed wood; IX.

*C. viscosa* (Pers.: Fr.) Fr. – on dead coniferous trees, in pine wood with *Abies*; IX.

*Dacrymyces stillatus* Nees: Fr. – on fallen twigs of *Abies*, in *Abietetum polonicum*; IX – X.

*Aphylophorales*

*Corticaceae*

*Aleurodiscus amorphus* (Pers.: Fr.) Schroet. – on dried twigs of *Abies*, in *Abietetum polonicum* (3); IX.

*Chondrostereum purpureum* (Pers.: Fr.) Pouz. – on stumps and fallen branches of deciduous trees, in mixed wood; VIII-XI.

*Merulius tremellosus* Schrad.: Fr. – on logs and stumps of deciduous and coniferous trees, in pine wood; VIII-X.

*Peniophora incarnata* (Pers.: Fr.) Karst. – on fallen branches of deciduous trees and bushes, in underwood and in alder carr; VII-XI.

*Phlebia radiata* Fr. – on a stump of a deciduous tree, in alder; IX.

*Stereum hirsutum* (Willd.: Fr.) S. F. Gray – on stumps, logs and on fallen branches of deciduous trees, in mixed wood; V-XI.

*Clavulinaceae*

*Clavulina cristata* (Fr.) Schroet. – among coniferous litter, in pine wood; VIII-X.

*Clavicornaceae*

*Artomyces pyxidatus* (Pers.: Fr.) Jülich – on a stump of a deciduous tree, in alder carr; IX-X.

*Thelephoraceae*

*Thelephora palmata* (Scop.): Fr. – among coniferous litter, in pine wood with *Abies*; X.

*T. terrestris* Pers.: Fr. – on fallen twigs, rotting stumps, green plant remnants and among litter on sandy soil, in alder carr and pine wood; VI-XI.

*Hydnaceae*

*Hydnum repandum* L.: Fr. – among deciduous litter, in mixed wood; IX.

*Hericiaceae*

*Heridium clathroides* (Pallas: Fr.) Karst. – on a log of a beech tree, in alder carr with *Fagus* (2, 3); IX-X.

*Steccherinaceae*

*Steccherinum fimbriatum* (Pers.: Fr.) Erikss. – on hymenophor of fructifications *Ganoderma lipsiense*, in moist mixed wood (2, 3); VIII.

*Auriscalpiaceae*

*Auriscalpium vulgare* S. F. Gray – on fallen cones of *Pinus*, in pine wood; VII-X.

*Lentinellus cochlateatus* (Pers.: Fr.) Karst. – on wood of a deciduous tree (*Alnus*) in alder carr; X.

*Cantharellaceae*

*Cantharellus cibarius* Fr. – on sandy soil, in pine wood; VI-X.

*C. tubaeformis* Fr. – in tufts of mosses and among litter, in mixed wood; VII-X.

*Craterellus cornucopioides* (L.): Pers. – among deciduous litter, in riparian forest and in hornbeam forest, VII-IX.

#### *Ganodermataceae*

*Ganoderma lipsiense* (Batsch) A tk. – on stumps and logs of deciduous trees, in alder carr and mixed wood.

#### *Hymenochaetaceae*

*Coltricia perennis* (L.: Fr.) Murr. – on sandy soil, in pine wood; VI-X.

*Hymenochaete cruenta* (Pers.: Fr.) Donk – on wood of *Abies*, in pine wood; IX.

*Inonotus dryadeus* (Pers.: Fr.) Murr. – on a stump of *Quercus*, on the edge of the forest (2, 3); VIII-XI.

*Phellinus igniarius* (L.: Fr.) Quél. – on a stump of *Fraxinus*, in riparian forest.

#### *Schizophyllaceae*

*Schizophyllum commune* Fr.: Fr. – on fallen branches of deciduous trees and bushes, in underwood, alder carr and mixed wood; VI-X.

#### *Polyporaceae*

*Bjerkanderu adusta* (Willd.: Fr.) Karst. – on stumps and branches of deciduous trees, in alder carr and mixed wood; VII-X.

*Daedalea quercina* (L.) Fr. – on logs and branched of *Quercus*, in hornbeam forest and in mixed wood.

*Daedaleopsis confragosa* (Bolt.: Fr.) Schroet. – on logs and stumps of deciduous trees, in mixed wood.

*Fomes fomentarius* (L.: Fr.) Fr. – on logs and stumps of *Betula*, in alder carr.

*Fomitopsis pinicola* (Sw.: Fr.) Karst. – on logs of *Pinus*, in pine wood.

*Gloeophyllum sepiarium* (Wulf.: Fr.) Karst. – on fallen branches of coniferous trees (*Pinus*), in pine wood; IX-X.

*Heterobasidion annosus* (Fr.) Bref. – at the base of stumps and trunks of *Pinus*, in pine wood.

*Junghuhnia nitida* (Fr.) Ryv. – on a trunk of a deciduous tree, in moist mixed wood with *Abies*; VIII.

*Piptoporus betulinus* (Bull.: Fr.) Karst. – on withering and dead stumps and branches of *Betula*, in alder carr and mixed wood; V-XI.

*Polyporus lepideus* Fr. – on twigs of *Fagus* lying on litter, in hornbeam forest; V.

*Postia caesia* (Schrad.: Fr.) Karst. – on stumps, logs and dried branches of *Pinus*, in pine wood; VII-X.

*P. stiptica* (Pers.: Fr.) Jülich – on trunks and branches of deciduous and coniferous trees, in mixed wood; VIII-XI.

*Schizopora paradoxa* (Schrad.: Fr.) Donk – on branches of deciduous trees lying on litter, in alder carr and in mixed wood; IX-XI.

*Trametes hirsuta* (Wulf.: Fr.) Pil. – on trunks, logs and dried braches of deciduous trees, in underwood, alder carr and in pine wood; VI-XI.

*T. versicolor* (L.: Fr.) Pil. – on trunks, logs and branches of deciduous trees lying in litter, in mixed wood; VII-XI.

*Trichaptum abietinum* (Pers.: Fr.) Ryv. – on fallen branches of *Pinus*, in pine wood with *Abies*; V-X.

*T. fuscoviolaceum* (Ehrenb.: Fr.) Ryv. – on fallen branches, logs and trunks of *Pinus*, in pine woods; VI-X.

#### *Boletales* *Boletaceae*

*Boletus edulis* Bull.: Fr. – among litter, in pine wood with *Abies* (2); VI, IX.

*Gyroporus castaneus* (Bull.: Fr.) Quél. – near *Quercus*, in hornbeam forest (2); IX.

*Leccinum aurantiacum* (Bull.) S. F. Gray – among litter near *Populus tremula*, in mixed wood; VIII-IX.

*L. griseum* (Quél.) Sing. – near *Carpinus*, in alder carr; IX.

*L. holopus* (Rostk.) Watling – among *Sphagnum* near *Betula*, in moist pine wood (2, 3); IX.

*L. scabrum* (Bull.: Fr.) S. F. Gray – among litter near *Betula*, in alder carr and in mixed wood; VIII-X.

*L. testaceoscabrum* ( Secr.) Sing. – among litter near *Betula*, in pine wood; X.

*Suillus hovinus* (L.: Fr.) O. Kuntze – on sandy soil near *Pinus*, in pine wood; VIII-IX.

*S. granulatus* (L.: Fr.) O. Kuntze – on sandy soil under *Pinus*, in mixed woods; IX-X.

*S. variegatus* (Swartz: Fr.) Kuntze – among litter near *Pinus*, in pine woods; VIII-X.

*Tylopilus felleus* (Bull.: Fr.) Karst. – among litter, in pine woods; VII-X.

*Xerocomus badius* (Fr.) Kühn. ex Gilb. – among coniferous litter and in tufts of mosses, in pine woods; VIII-X.

*X. chrysenteron* (Bull. ex St.-Am.) Quél. – among deciduous and coniferous litter, in pine woods; VIII-X.

*X. parasiticus* (Bull.: Fr.) Quél. – on fructifications of *Scleroderma citrinum*, in moist pine wood; IX.



*X. rubellus* (Krombh.) Quél. – on humic soil at a midforest road, in underwood (2); IX.

*X. subtomentosus* (L.: Fr.) Quél. – among deciduous and coniferous litter, in pine woods; VIII-X.

#### *Paxillaceae*

*Hygrophoropsis aurantiaca* (Wulf.: Fr.) R. Mre. – on coniferous litter, in pine woods; VIII-XI.

*Paxillus atrotomentosus* (Batsch) Fr. – on musty trunks of *Pinus*, in pine woods; IX-X.

*P. involutus* (Batsch) Fr. – among deciduous and coniferous litter, in alder carr and in pine woods; VI-XI.

#### *Gomphidiaceae*

*Chroogomphus rutilus* (Schaeff.: Fr.) O. K. Miller – on sandy soil near *Pinus*, in pine wood; VIII-IX.

#### *Agaricales*

#### *Pleurotaceae*

*Pleurotus ostreatus* (Jacq.: Fr.) Kumm. – on trunks, logs and branches of deciduous trees, in mixed wood; IX.

*P. pulmonarius* Fr. – on a log of *Alnus*, in alder carr; IX.

#### *Tricholomataceae*

*Armillariella mellea* (Vahl. in Fl. Dan.: Fr.) Karst. – on trunks of deciduous and coniferous (*Pinus*) trees, in alder carr and pine woods; IX-XI.

*Clitocybe clavipes* (Pers.: Fr.) Kumm. – among coniferous litter, in pine woods; VIII-IX.

*C. inornata* (Sow.: Fr.) Gill. – among deciduous and coniferous litter, in mixed wood; IX-X.

*Collybia butyraceae* (Bull.: Fr.) Quél. – among deciduous and coniferous litter, in alder carr and mixed wood; VIII-X.

*C. distorta* (Fr.) Quél. – among coniferous litter, in pine woods; IX-X.

*C. dryophila* (Bull.: Fr.) Kumm. – among deciduous and coniferous litter, in pine woods; VI-XI.

*C. maculata* (Alb. et Schw.: Fr.) Quél. – on trunks of deciduous and coniferous trees, in mixed wood; VII-X.

*C. peronata* (Bolt.: Fr.) Sing. – among litter, in alder carr and mixed wood; IX-X.

*Flammulina velutipes* (Curt.: Fr.) Sing. – on trunks of deciduous trees, in alder carr, hornbeam forest and in mixed wood; XI-V.

*Hydopus atramentosus* (Kalchbr.) Kotl. et Pouz. – on a log of a fir tree, in mixed wood (3); VII.

*Laccaria amethystina* (Bolt.: Fr.) Berk. et Br. – among litter, in alder carr and in pine woods; VII-X.

*L. laccata* (Scop.: Fr.) Bk. et Br. – among litter, in underwood, alder carr and in pine woods; VI-X.

*Lepista nuda* (Bull.: Fr.) Cke. – among deciduous litter, in mixed wood; VIII-X.

*Leucopaxillus gentianeus* (Quél.) Kotl. – among deciduous litter, in mixed wood (2, 3); VIII.

*Marasmius alliaceus* (Jacq.: Fr.) Fr. – on strongly musty trunks of deciduous trees, in hornbeam forest; VI.

*M. oreades* (Bolt.: Fr.) Fr. – on grassy clearings and roadsides, in pine woods; VI-X.

*Mycena alcalina* (Fr.) Kumm. – on musty trunks and logs of coniferous trees, in pine woods; VI-IX.

*M. epipterygia* (Scop.) S. F. Gray – among tufts of mosses, in pine wood with *Abies*; IX-X.

*M. haematopoda* (Pers.: Fr.) Kumm. – on trunks of deciduous trees, in alder carr (2); VIII.

*M. pelianthina* (Fr.) Quél. – among deciduous litter, in hornbeam forest (2); IX.

*M. pura* (Pers.: Fr.) Quél. – among litter, in mixed wood; VII-IX.

*M. sanguinolenta* (A. et S.: Fr.) Kumm. – among litter, in mixed wood; VIII.

*M. stylobates* (Pers.: Fr.) Kumm. – on fallen leaves, in alder carr, hornbeam forest and mixed wood (2); VII-IX.

*Oudemansiella platyphylla* (Pers.: Fr.) Mos. – among litter near musty trunks, in pine woods; VI-VIII.

*O. radicata* (Relhan.: Fr.) Sing. – among deciduous litter, in hornbeam forest; VIII-X.

*Panellus mitis* (Pers.: Fr.) Sing. – on dried branches of *Pinus*, in pine woods; VIII-X.

*Rickenella fibula* (Bull.: Fr.) Raith. – among tufts of mosses, in pine woods; VI-IX.

*Tricholomopsis decora* (Fr.) Sing. – on a log of *Abies*, in moist mixed wood; IX.

*T. rutilans* (Schaeff.: Fr.) Sing. – on stumps of coniferous trees, in coniferous woods; VIII-X.

*Xeromphalina campanella* (Batsch: Fr.) R. Mre. – on stumps of coniferous trees, in pine woods; VI-X.

*Entolomataceae*

*Entoloma clypeatum* (L.: Fr.) Kumm. – among grasses, at a midforest road; VI.

*E. nidorosum* (Fr.) Quél. – among deciduous litter, in hornbeam forest; VIII-IX.

*E. rhodopolium* (Fr.) Quél. – among deciduous litter, at a midforest road, in alder carr; IX.

*Pluteaceae*

*Pluteus atricapillus* (Secr.) Sing. – on stumps and logs of deciduous trees, in alder carr and in mixed wood; VII-X.

*P. atomarginatus* (Konr.) Kühn. – on stumps and logs of *Pinus*, in pine woods; VII-IX.

*Amanitaceae*

*Amanita citrina* (Schaeff.) S. F. Gray – among deciduous and coniferous litter; in pine woods; VIII-X.

*A. fulva* Schaeff.: Pers. – among deciduous and coniferous litter, in pine woods; VI-IX.

*A. muscaria* (L.: Fr.) Hook. – among litter, in pine woods; VIII-IX.

*A. phalloides* (Vaill.) Secr. – among deciduous litter, in mixed wood; VII-IX.

*A. porphyria* (Alb. et Schw.: Fr.) Secr. – among coniferous litter, in pine wood with *Abies*; IX-X.

*A. rubescens* (Pers.: Fr.) S. F. Gray – among deciduous and coniferous litter, in pine woods; VII-X.

*A. vaginata* (Bull.: Fr.) Quél. – among litter, in pine woods; VIII-X.

*A. virosa* (Fr.) Bertillon – among coniferous litter, in pine wood; X.

*Agaricaceae*

*Cystoderma amiantinum* (Scop.: Fr.) K. et M. – among coniferous litter, in pine woods; IX-X.

*C. carcharias* (Pers.) Konr. et Maubl. – among coniferous litter, in pine woods; IX-X.

*C. cinnabarinum* (A. et S. ex Secr.) Fay – among deciduous and coniferous litter, in mixed wood; IX.

*Macrolepiota rhacodes* (Vitt.) Sing. – among litter, in mixed wood; VIII-X.

*Coprinaceae*

*Psathyrella candolleana* (Fr.) Mre. – among litter, in mixed wood; V.

*Strophariaceae*

*Hypholoma capnoides* (Fr.: Fr.) Kumm. – on stumps and logs of coniferous trees, in pine woods; VI-XI.

*H. fasciculare* (Huds.: Fr.) Kumm. – on stumps of deciduous and coniferous trees, in alder carr and pine woods; V-XI.

*H. myosotis* (Fr.) Mos. – among *Sphagnum*, in moist pine wood; X.

*H. sublateritium* (Fr.) Quél. – on stumps of deciduous trees, in alder carr and mixed wood; VI-X.

*Kuehneromyces mutabilis* (Schaeff.: Fr.) Sing. et Smith. – on musty stumps of deciduous trees, in alder carr, hornbeam forest and in mixed wood; VI-X.

*Pholiota astragalina* (Fr.) Sing. – on a log of *Pinus*, in pine wood; VIII-X.

*P. aurivella* (Batsch: Fr.) Kumm. – on stumps and logs of deciduous trees (*Betula*), in mixed wood; VIII-X.

*P. flammans* (Fr.) Kumm. – on dried branches of *Pinus*, in pine wood with *Abies* (2); VIII-X.

*P. lenta* (Pers.: Fr.) Sing. – on a stumps of a deciduous tree, in alder carr; IX.

*Stropharia aeruginosa* (Curt.: Fr.) Quél. – among litter and on strongly musty stumps, in pine woods; IX-X.

*Crepidotaceae*

*Crepidotus variabilis* (Pers.: Fr.) Kumm. – on fallen branches of deciduous trees, in underwood, alder carr and in hornbeam forest; VII-X.

*Cortinariaceae*

*Cortinarius alboviolaceus* (Pers.: Fr.) Fr. – among deciduous and coniferous litter, in mixed wood (2); IX.

*C. bolaris* (Pers.: Fr.) Fr. – in tufts of mosses, in moist mixed wood (3); VIII-IX.

*C. collinitus* Fr. – among coniferous litter, in pine wood; IX.

*C. paleaceus* Fr. – in tufts of mosses, in pine wood; IX-X.

*Dermocybe cinnamomea* (L.: Fr.) Wunsche – among coniferous litter near *Pinus*, in pine woods, IX-X.

*D. sanguinea* (Wulf.: Fr.) Wunsche – among *Sphagnum*, in moist pine wood; X.

- D. semisanquinea* Fr. – among coniferous litter, in pine woods; X.  
*Galerina marginata* (Fr.) Kumm. – on musty stumps of *Pinus*, in pine woods; VIII-X.  
*G. paludosa* (Fr.) Kühn. – among *Sphagnum*, in moist pine wood; VII-IX.  
*G. sphangorum* (Pers.: Fr.) Kühn. – among *Sphagnum*, in moist pine wood; VIII-X.  
*Gymnopilus penetrans* (Fr.: Fr.) Murr. – on dried branches of *Pinus*, in pine wood with *Abies*; VIII-X.  
*G. spectabilis* (Fr.) Sing. – on stumps and dried branches of deciduous trees, in alder carr and hornbeam forest (2); VIII-X.  
*Inocybe fastigiata* (Schaeff.: Fr.) Quéf. – on sandy soil at midforest roads, in pine woods; IX-X.  
*I. geophylla* (Sow.: Fr.) Kumm. – on sandy soil, in pine woods; VIII-X.  
*I. lanuginosa* (Bull.: Fr.) Kumm. – among coniferous litter, in moist pine wood; IX-X.  
*Rozites caparata* (Pers.: Fr.) Karst. – among coniferous litter, in pine wood; IX-X.

*Russulales*  
*Russulaceae*

- Lactarius blennius* Fr. – among coniferous litter, near *Fagus*, in hornbeam forest; VII-IX.  
*L. camphoratus* (Bull.) Fr. – among deciduous litter, near *Pinus*, in pine woods; VIII-X.  
*L. helvius* Fr. – among litter, in alder carr and in pine woods; VIII-X.  
*L. mitissimus* Fr. – among litter and tufts of mosses, in pine woods; VIII-IX.  
*L. necator* (Bull. em Pers.: Fr.) Karst. – among deciduous litter under *Betula*, in alder carr and in mixed wood; VIII-XI.  
*L. rufus* (Scop.: Fr.) Fr. – among deciduous and coniferous litter, in alder carr and pine woods; VIII-XI.  
*Russula adusta* Fr. – among coniferous litter, near *Pinus*, in pine wood; VII-IX. ➤  
*R. aeruginea* Lindbl. – among litter near *Betula*, in mixed wood; VII-VIII.  
*R. albonigra* Krbh. – among deciduous and coniferous litter, in mixed wood; VIII.  
*R. cyanoxantha* Schaeff.: Fr. – among deciduous and coniferous litter, in pine woods; VII-IX.  
*R. emetica* Fr. – among litter and in tufts of *Sphagnum*, in moist pine wood; VII-IX.  
*R. flava* (Rom.) Rom. ap. Lindbl. – among litter near *Alnus*, in alder carr; VIII.

*R. integra* L.: Fr. ss. R. Mre. – among litter near *Abies*, in pine wood; IX.

*R. ochroleuca* (Pers.) Fr. – among litter, in pine woods; VIII-IX.

*R. sardonica* Fr. – among coniferous litter near *Pinus*, in pine wood; VII-IX.

*R. virescens* (Schaeff. ex Zant) Fr. – among deciduous and coniferous litter, in pine woods; VII-IX.

*Sclerodermatales*  
*Sclerodermataceae*

*Scleroderma citrinum* Pers. – on sandy soil at midforest roads, in pine woods; VII-XI.

*S. verrucosum* (Bull.) Pers. – among litter, in mixed wood; IX.

*Nidulariales*  
*Nidulariaceae*

*Crucibulum laeve* (Huds. ex Relh.) Kambly – on twigs of deciduous trees lying in litter, in alder carr and mixed wood; IX-X.

*Cyathus striatus* (Huds.) Pers. – on remnants of wood, fallen twigs and plant remains, in underwood, alder carr, hornbeam forest and in pine woods; VII-XI.

*Sphaerobolaceae*

*Sphaerobolus stellatus* Tode: Pers. – on a stump of a coniferous tree, in pine wood; IX.

*Lycoperdales*  
*Lycoperdaceae*

*Calvatia utriformis* (Bull.: Pers.) Jaap – among litter on sandy soil, in pine wood; VII-IX.

*Lycoperdon perlatum* Pers.: Pers. – among litter, in pine woods; VII-X.

*L. pyriforme* Schaeff.: Pers. – on strongly musty stumps of deciduous trees, in alder carr and pine woods; VII-X.

*L. umbrinum* Pers.: Pers. – on coniferous litter, in pine wood; IX.

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## STRESZCZENIE

W rezerwacie Łęka (Park Krajobrazowy Lasy Janowskie – Kotlina Sandonierska) stwierdzono występowanie 176 gatunków grzybów wielkoowocnikowych, należących do 12 rzędów, 37 rodzin oraz 95 rodzajów (tab. 1)

Najliczniejszą florę macromycetes prezentują następujące rodziny: *Tricholomataceae*, *Polyporaceae*, *Boletaceae*, *Cortinariaceae*, *Russulaceae* i *Strophariaceae* (ryc. 1), zaś najliczniejszymi rodzajami są: *Russula*, *Amanita*, *Mycena*, *Collybia*, *Lactarius*, *Leccinum* i *Xerocomus* (ryc. 2).

Wiele stwierdzonych tu gatunków (ok. 25%) zasługuje na szczególną uwagę. Niektóre z nich (*Aleurodiscus amorphus*, *Calocera cornea*, *Cortinarius holaris*, *Geoglossum nigratum*, *Hydnum repandum*, *Hypocrea citrina*, *Inocybe lanuginosa*, *Lentinus cochleatus*, *Leucopaxillus gentianeus*, *Paxillus atrotomentosus*, *Thelephora palmata*, *Xerocomus rubellus*) niezbyt często wymienia się w specjalistycznej literaturze. Inne (21 gat.) wpisane są na listę gatunków zagrożonych. Należą one do czterech kategorii zagrożenia: **E** (wymierające) – *Hydropus atramentosus*; **V** (narażone) – *Amanita virosa*, *Boletus edulis*, *Hericium clathroides*, *Inonotus dryadeus*, *Leccinum holopus*, *Pleurotus pulmonarius*; **R** (rzadkie) – *Bulgaria inquinans*, *Cystoderma cinnabarinum*, *Hymenochaete cruenta*, *Junghuhnia nitida*, *Tricholomopsis decora*, *Xerocomus parasiticus*; **I** (o nieokreślonym zagrożeniu) – *Artomyces pyxidatus*, *Cantharellus cibarius*, *Galerina paludosa*, *G. Sphagnorum*, *Gyroporus castaneus*, *Macrolepiota rhacodes*, *Mycena pelianthina*, *Steccherinum fimbriatum*. Dwa występujące tu gatunki (*Hericium clathroides*, *Xerocomus parasiticus*) objęte są prawną ochroną.

W zbiorowiskach leśnych rezerwatu Łęka udział grzybów naziemnych jest największy (tab. 2, ryc. 3 I). W większości żyją w symbiozie z różnymi gatunkami drzew (ryc. 3 II). Taką formę życia mają przede wszystkim gatunki z rzędów: *Agaricales*, *Boletales* i *Russulales*. Wśród *Agaricales* wiele gatunków wykazuje formę saprotroficzną, zasiedlając różny substrat ściółki zielonej.

Znaczący udział mają również grzyby ksylofilne (nadrzewne), które w rezerwacie znajdują urozmaicony substrat (różnorodność gatunkowa drzew). Dominują saprotrofy z rzędów *Aphylophorales* i *Agaricales*. Nielicznie i sporadycznie występują pasożyty, głównie z rzędu *Aphylophorales* (5 gat.).