

## Microscopic fungus-like organisms and fungi of the Słowiński National Park. II. (NW Poland)

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The second part of the 2-part paper continues the presentation of results of a 3-year study on the occurrence of microscopic saprotrophic and parasitic fungus-like organisms and fungi in seven natural plant associations of the Słowiński National Park. The 310 species in 79 fungal genera revealed are listed and their frequency of occurrence in both each plant association where present and all the plant associations considered is presented. In case of species earlier infrequently found or for the first time encountered in Poland, their general distribution is also provided.

**Key words:** microscopic fungus-like organisms and fungi, occurrence, Słowiński National Park

### INTRODUCTION

This paper is the second part of the elaboration showing results of a 3-year study on the occurrence of microscopic saprotrophic and parasitic fungus-like organisms and fungi found in natural plant associations of seven permanent plots of the Słowiński National Park (SPN). The first part of the work presented physical, biotic, and soil chemical properties of the permanent plots selected and the numeral and species composition of the microorganisms revealed in a particular plant association (Adamska and Błaszowski 2000). In this part, the microorganisms revealed are listed and their frequency of occurrence in both each plant association where present and all the plant associations considered is presented. In case of species earlier infrequently found (not more frequently than three times) or for the first time encountered in Poland, their general distribution is also provided.

## MATERIALS AND METHODS

The physical, biotic, and soil chemical properties of the plots investigated, the dates of collection of diseased plants, the methods of isolation and identification of the fungus-like organisms and fungi revealed, as well as the climatic conditions of the years 1996–1998 were characterized in the first part of the work (Adamska and Błaszkowski 2000). Briefly, the studies were conducted in natural plant associations of seven permanent plots of SNP (54°38'–54°46'N, 17°03'–17°03'–17°33'E). Each plot measured ca. 400 m<sup>2</sup>. The plant associations were *Betuletum pubescentis*, *Betulo-Quercetum roboris*, *Cirsio-Polygonetum*, *Filipendulo-Geraniumetum*, *Myrico-Salicetum auritae*, *Phragmitetum australis*, and *Ribo nigri-Alnetum*. In each year, samples of diseased plants were collected three times, i.e., in July, August and September. The microorganisms revealed were identified based on the properties of structures forming spores and the species affinity of their plant hosts. When needed, diseased plant samples were placed in damp chambers to initiate or prolong development and sporulation. Saprotrophic species were cultured on agar media, mainly on potato dextrose agar (Difco laboratories). The microorganisms revealed were identified according to Barnett and Hunter (1999), Braun (1987), Ellis (1971, 1976), Kochman and Majewski (1970, 1973), Majewski (1977, 1979), Sutton (1980), and Vánky (1994).

The microorganisms found only in a mitomorphic stage were classified to particular phyla having considered the properties of their meiomorphic stages given by Hawksworth et al. (1995).

The frequency of the fungus-like organisms and fungi found was expressed regarding to both each plant association where occurred and all the plant associations considered (general frequency). The scale determining the frequency of occurrence of a given microorganism in a plant association is:

- 0 – rare; single plants affected,
- + – relatively frequent; up to 10 plants affected,
- ++ – frequent; 11–20 plants affected,
- +++ – very frequent; most plants affected.

Nomenclature of plants is that of Mirek et al. (1995).

## RESULTS AND DISCUSSION

In the SNP seven plant associations considered, a total of 310 species in 79 genera of fungus-like organisms and fungi were found (Table 1; Adamska and Błaszkowski 2000). Most species came from mitosporic fungi (103 species) and the phylum Basidiomycota (99; Table 1). The microorganisms most frequently encountered were members of the genus *Puccinia* (43 species).

Table 1

Genera and species of fungus-like organisms and fungi found associated with plants of the Słowiński National Park in 1996–1998

	Number of genera	Number of species
Oomycota	4	31
Ascomycota	30	77
Basidiomycota	18	99
Mitosporic fungi	27	103
Total	79	310

The fungi earlier infrequently recorded in Poland were *Ascochyta daronici*, *A. plantaginis*, *A. viciae*, *Cercospora chaerophylli*, *C. ferruginea*, *Cercospora cana*, *Cercosporidium galii*, *Didymaria linariae*, *Guignardia reticulata*, *Kabatella microticta*, *Leptotrichia ranunculi*, *Mycosphaerella ranunculi*, *M. rubi*, *Phyllosticta hieracii*, *P. lappae*, *P. leptidae*, *P. typhina*, *Ramularia anthrisci*, *R. cirsi*, *R. decipiens*, *R. geranii*, *R. lactea*, *R. macrospora*, *R. montana*, *R. tanacetii*, *R. ulmariae*, *R. veronicae*, *Septoria agrimoniae*, *S. betulina*, *S. calamagrostidis*, *S. cerastii*, *S. cruciatae*, *S. diedickei*, *S. endiviae*, *S. heracleicola*, *S. hyperici*, *S. plantaginis*, *S. scabiosicola*, *S. stellariae*, *S. tanacetii*, *Stagonospora arenaria*, *Stenella subsanguinea*, and *Uromyces euphorbiae-corniculati*.

Eighteen fungal species were for the first time found in Poland. They were *Ascochyta euphrasiae*, *Cercospora euphrasiae*, *Cercospora tragopogonis*, *Colletotrichum trifolii*, *Diaporthe woodii*, *Diplodina medicaginis*, *Heterosporium phlei*, *Mycosphaerella epilobii-montani*, *Phyllosticta symphyti*, *Pseudocercospora capsellae*, *Ramularia centaureae*, *Schizothyrioma ptarmicae*, *Septoria campanulae*, *S. crepidis*, *S. lapsanae*, *S. sisymbrii*, *S. veronicae*, and *Ustilago cichorii*. Of them, *Schizothyrioma ptarmicae* was earlier infrequently recorded in Europe (Ellis and Ellis 1987).

Most species harboured plants of the *Cirsio-Polygonetum* association (129 species), and least those of *Phragmitetum australis* (22 species). The plant species colonized by the greatest number of fungi was *Agropyron repens* (13 species), including *Ascochyta graminicola*, *Blumeria graminis*, *Clathrospora diplospora*, *Claviceps purpurea*, *Gibberella zeae*, *Mastigosporium rubricosum*, *Phyllachora graminis*, *Puccinia coronata*, *P. graminis*, *Pyrenophora graminea*, *Ramularia pusilla*, *Urocystis agropyri*, and *Ustilago hypodytes*.

Sixty-eight new plant hosts of 51 fungal species commonly occurring in other regions of Poland were revealed. The plants and their inhabitants were: *Agropyron repens* (*Mastigosporium rubricosum*, *Ramularia pusilla*), *Agrostis capillaris* (*Mastigosporium rubricosum*), *A. stolonifera* (*Septoria graminum*), *Arrhenatherum elatius* (*Mastigosporium rubricosum*, *Claviceps purpurea*), *Avena fatua* (*Pyrenophora avenae*), *Bromus hordeaceus* (*Pyrenophora bromi*, *Septoria*

*graminum*), *B. inermis* and *Calamagrostis epigeios* (*Claviceps purpurea*), *Capsella bursa-pastoris* (*Pseudocercospora capsellae*), *Cerastium sylvaticum* (*Puccinia arenariae*), *Chaerophyllum temulum* (*Puccinia chaerophylli*), *Chamomilla suaveolens* (*Sphaerotheca fusca*), *Comarum palustre* (*Phragmidium potentillae*), *Conval-laria majalis* (*Guignardia reticulata*), *Elymus arenarius* (*Claviceps purpurea*), *Epilobium hirsutum* and *E. montanum* (*Septoria epilobii*), *E. parviflorum* (*Ramularia montana*), *E. roseum* (*Septoria epilobii*), *Euphrasia micrantha* (*Sphaerotheca fusca*), *Festuca heterophylla* (*Septoria graminum*), *F. ovina* and *F. pratensis* (*Mastigosporium rubricosum*), *F. pratensis* (*Septoria graminum*), *F. rubra* (*Mastigosporium rubricosum*, *Phyllachora graminis*, *Ramularia pusilla*), *Filipendula vulgaris* (*Septoria ulmariae*), *Galeopsis tetrahit* (*Ramularia lamii*), *Galium saxatile* (*Cercosporidium galii*, *Septoria cruciatae*), *Geranium dissectum* (*Ramularia geranii*, *Septoria geranii*), *G. molle* (*Ramularia geranii*), *G. palustre* (*Pestalotiella subsessilis*), *G. pusillum* (*Septoria geranii*, *Sphaerotheca fugax*), *G. robertianum* (*Ramularia geranii*, *Sphaerotheca fugax*), *Hieracium laevigatum* (*Phyllosticta hieracii*, *Ramularia hieracii*, *R. taraxaci*, *Septoria mougeotii*), *H. sabaudum* (*Ramularia hieracii*), *Lembotropis nigricans* (*Pleiochaeta setosa*), *Lolium multiflorum* (*Mastigosporium rubricosum*), *L. perenne* (*Phyllachora graminis*, *Ramularia pusilla*, *Septoria graminum*), *Maianthemum bifolium* (*Guignardia reticulata*), *Mentha arvensis* and *M. x citrata* subsp. *citrata* (*Septoria menthae*), *Molinia caerulea* (*Septoria graminum*), *Myosotis caespitosa* (*Peronospora myosotidis* and *Puccinia cerinthes-agropyrina*), *Papaver rhoeas* (*Pyrenophora calvescens*), *Phalaris arundinacea* (*Septoria graminum*), *Phleum pratense* (*Mastigosporium rubricosum*, *Septoria graminum*, *Claviceps purpurea*), *Plantago lanceolata* (*Phyllosticta plantaginis*), *Poa trivialis* (*Mastigosporium rubricosum*, *Phyllachora graminis*), *Polygonum amphibium* (*Erysiphe polygoni*), *P. hydropiper* (*Ramularia pratensis*), *P. persicaria* (*Erysiphe polygoni*), *Ranunculus arvensis* (*Erysiphe aquilegiae* var. *ranunculi*), *R. bulbosus* (*Ramularia didyma*), *Raphanus raphanistrum* (*Erysiphe cruciferarum*), *Rubus plicatus* (*Elsinè veneta*), *Rumex conglomeratus* and *R. hydrolapathum* (*Erysiphe polygoni*), *R. obtusifolius* (*Septoria rumicis*), *Senecio vernalis* (*Erysiphe cichoracearum* var. *cichoracearum*), *Stellaria palustris* (*Septoria stellariae*), *Trifolium dubium* and *T. montanum* (*Pseudopeziza trifolii*), *Veronica arvensis* (*Ramularia veronicae*), *V. montana* (*Erysiphe orontii*), *Vicia cracca* (*Ascochyta viciae*), *V. tetrasperma* (*Ovularia sphaeroidea*), *Viola arvensis* (*Erysiphe orontii*, *Phyllosticta violae*, *Ramularia lactea*), *V. palustris* (*Ramularia lactea*, *Urocystis violae*), and *V. tricolor* (*Phyllosticta violae*).

Seven species of the order *Erysiphales* was for the first time found to be the hosts of the hyperparasite *Ampelomyces quisqualis*. The powdery mildew fungal species parasitized by *A. quisqualis* and their plant hosts included *Erysiphe aquilegiae* var. *ranunculi* (*Ranunculus repens*), *E. cichoracearum* var. *cichoracearum* (*Cichorium intybus*, *Tragopogon pratensis*), *E. convolvuli* var. *calystegiae* (*Calystegia sepium*), *E. mayorii* var. *mayorii* (*Cirsium arvense*), *E. pisi* var. *pisi* (*Lathyrus montanus*, *Melilotus alba*), *Sphaerotheca epilobii* (*Epilobium roseum*), and *S. fusca* (*Cirsium oleraceum*).



## Fungus-like organisms and fungi found in the Słowiński National Park

Abbreviations: 0, +, ++, +++; GF - see „Materials and methods”. *Bp* - *Betuletum pubescens*; *B-Qr* - *Betulo-Quercetum roboris*; *C-P* - *Cirsio-Polygonetum*; *F-G* - *Filipendulo-Geranietum*; *M-Sa* - *Myrico-Salicetum auritae*; *Pa* - *Phragmitetum australis*; *Rn-A* - *Ribonigri-Alnetum*. The data following are the months and years of collection of a given microorganism. The word after the plant host of a microorganism is the locality where the plant and its association occurred. Because two permanent plots were established at the southern and north-eastern side of the Gardno Lake, they are named below as S Gardno and NE Gardno, respectively.

## CHROMISTA

## OOMYCOTA

## PERONOSPORALES

- Albugo candida* (Pers. ex Fr.) Kunze - on *Capsella bursa-pastoris*, Gać, *F-G*, ++, VII-VIII 1997, VII-IX 1998; on *Sinapis arvensis*, Kluki, *C-P*, +, VII 1998; on *Sisymbrium officinale*, Gać, *F-G*, ++, VIII 1996, VIII 1998.
- Albugo tragopogonis* S. F. Gray - on *Tragopogon dubius*, Czolpino, *M-Sa*, 0, VII 1998; on *T. pratensis*, Dolgie Duże, *Rn-A*, ++, IX 1997, VII 1998.
- Bremia lactucae* Regel - on *Hieracium sabaudum*, Dolgie Małe, *Bp*, +, VIII-IX 1998; on *Lactuca sativa* (Fig. 1c-d), Czolpino, *M-Sa*, 0, IX 1996; on *Lapsana communis*, Czolpino, *M-Sa*, +, VIII 1996; on *Senecio vulgaris*, Kluki, *C-P*, 0, IX 1998; on *Taraxacum officinale*, Kluki, *C-P*, 0, VIII 1997.
- Peronospora aestivalis* H. Syd. - on *Medicago sativa*, Gać, *F-G*, +, IX 1996.
- Peronospora agrestis* Gäum. - on *Veronica arvensis*, Kluki, *C-P*, +, VIII 1997.
- Peronospora agrostemmatidis* Gäum. - on *Agrostemma githago*, Gać, *F-G*, 0, IX 1998.
- Peronospora alsinearum* Casp. - on *Stellaria media*, Dolgie Małe, *Bp*, +, IX 1996.
- Peronospora arborescens* (Berk.) Casp. - on *Papaver rhoeas*, NE Gardno, *B-Qr*, +, VII 1998.
- Peronospora chenopodii* Casp. - on *Chenopodium album* (Fig. 1a), Kluki, *C-P*, ++, Gać, *F-G*, 0, VIII 1997, VII 1998.
- Peronospora conglomerata* Fuck. - on *Geranium dissectum*, Dolgie Małe, *Bp*, 0, VIII 1997.
- Peronospora de-Baryi* Salm. et Ware - on *Urtica urens*, Kluki, *C-P*, 0, IX 1998.
- Peronospora gei* Syd. - on *Geum rivale*, Dolgie Duże, *Rn-A*, +, VII 1998.
- Peronospora lamii* A. Br. - on *Lamium maculatum*, NE Gardno, *B-Qr*, 0, VII 1998.
- Peronospora lotorum* H. Syd. - on *Lotus corniculatus*, Kluki, *C-P*, +, VIII 1998; on *L. ulginosus*, Kluki, *C-P*, 0, Gać, *F-G*, +, VII 1996, IX 1997.
- Peronospora Mayorii* Gäum. - on *Vicia cracca*, Gać, *F-G*, +, VII 1996, VIII 1997.

- Peronospora meliloti* H. Syd. — on *Melilotus alba*, Kluki, C-P, +, IX 1997.
- Peronospora myosotidis* de Bary — on *Myosotis caespitosa*, Kluki, C-P, ++, VIII 1997.
- Peronospora niessleana* Berl. — on *Alliaria petiolata*, Dołgie Duże, Rn-A, 0, VIII 1998.
- Peronospora parasitica* (Fr.) Fr. — on *Capsella bursa-pastoris*, Gać, F-G, +, VIII-IX 1998.
- Peronospora ranunculi* Gäum. — on *Ranunculus auricomus*, Dołgie Duże, Rn-A, 0, VII 1997; on *R. repens*, NE Gardno, B-Qr, + + +, VIII 1998.
- Peronospora sisymbrii-officinalis* Gäum. — on *Sisymbrium officinale*, Gać, F-G, 0, VII 1998.
- Peronospora trifolii-arvensis* H. Syd. — on *Trifolium arvense*, Czolpino, M-Sa, +, VIII 1997.
- Peronospora trifoliorum* de Bary — on *Trifolium alpestre*, Kluki, C-P, 0, VIII 1996.
- Peronospora urticae* (Lib.) Casp. — on *Urtica dioica*, Dołgie Duże, Rn-A, + +, IX 1998.
- Peronospora viciae* (Berk.) Casp. — on *Vicia sativa*, Kluki, C-P, +, IX 1998.
- Peronospora violae* de Bary — on *Viola arvensis*, Dołgie Male, Bp, +, Czolpino, M-Sa, 0, VII 1996, VIII 1997.
- Plasmopara epilobii* (Othth) Sacc. et P. Syd. — on *Chamaenerion angustifolium*, Kluki, C-P, 0, VIII 1996.
- Plasmopara leptosperma* (de Bary) Skal. — on *Matricaria maritima* subsp. *inodora* (Fig. 1b), Gać, F-G, 0, IX 1998.
- Plasmopara pusilla* (de Bary) Schroet. — on *Geranium molle*, NE Gardno, B-Qr, 0, IX 1997; on *G. palustre*, Dołgie Duże, Rn-A, 0, IX 1998; on *G. pratense*, Dołgie Duże, Rn-A, +, VIII 1998.
- Plasmopara pygmaea* (Ung.) Schroet. — on *Anemone nemorosa*, NE Gardno, B-Qr, +, IX 1997.
- Plasmopara umbelliferarum* (Casp.) Schroet. ex Wartenw. — on *Aegopodium podagraria*, NE Gardno, B-Qr, + + +, Czolpino, M-Sa, + + +, Gać, F-G, + +, VII 1997, VII-IX 1998; on *Anthriscus sylvestris*, Dołgie Male, Bp, 0, IX 1998.

## FUNGI

### ASCOMYCOTA

#### DIAPORTHALES

- Diaporthe woodii* Punith. — on *Lupinus luteus*, Gać, F-G, 0, VIII 1998; on *L. polyphyllus*, Kluki, C-P, 0, VIII 1998. Found in the mitomorphic stage *Phomopsis leptostromiformis* (Kuhn.) Bub. This fungus was not reported in Poland to date, although Brandenburger (1985) mentioned it among fungi of the Middle Europe.

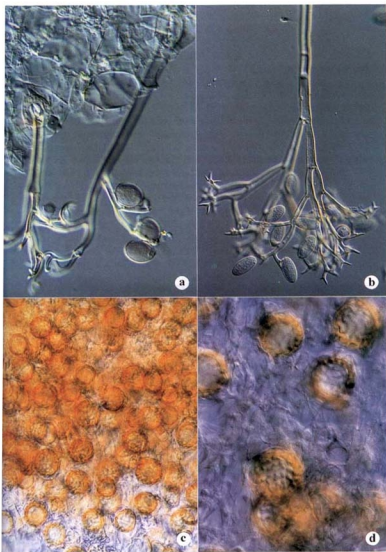


Fig. 1. *Peronospora chenopodii* from *Chenopodium album*, sporangiophores with spores, differential interference contrast (DIC),  $\times 260$  (a). *Plasmopara leptosperma*, sporangiophore with spores (b). *Bremia lactucae* in leaves of *Lactuca sativa*, oospores, DIC,  $\times 360$ ,  $\times 760$  (c and d, respectively)

## DOTHIDEALES

- Clathrospora diplospora* (Ellis et Everh.) Wehm. — on *Achillea ptarmica*, Czolpino, *M-Sa*, +, Kluki, *C-P*, +, IX 1998; on *Aegopodium podagraria*, NE Gardno, *B-Qr*, 0, VIII 1996; on *Agropyron repens*, S Gardno, *Pa*, +, Kluki, *C-P*, +, Gać, *F-G*, + + +, VIII 1996, VIII-IX 1997, VII-IX 1998; on *Agrostemma githago*, Gać, *F-G*, +, IX 1998; on *Agrostis stolonifera*, Kluki, *C-P*, 0, VIII 1998; on *A. capillaris*, NE Gardno, *B-Qr*, 0, VII 1996; on *Alisma plantago-aquatica*, S Gardno, *Pa*, +, VIII 1998; on *Alopecurus myosuroides*, Kluki, *C-P*, 0, IX 1998; on *A. pratensis*, Gać, *F-G*, 0, VIII 1997; on *Amaranthus retroflexus*, Gać, *F-G*, 0, IX 1998; on *Anchusa officinalis*, Kluki, *C-P*, 0, VIII 1998; on *Anthoxanthum odoratum*, Kluki, *C-P*, 0, VIII 1998; on *Anthriscus sylvestris*, Dolgie Małe, *Bp*, + +, VII 1998; on *Arrhenatherum elatius*, Czolpino, *M-Sa*, + +, Gać, *F-G*, 0, VIII 1997; on *Artemisia absinthium*, Dolgie Małe, *Bp*, +, IX 1997, VIII 1998; on *A. vulgaris*, Czolpino, *M-Sa*, 0, Kluki, *C-P*, + +, VIII 1996, IX 1997; on *Avena fatua*, Dolgie Małe, *Bp*, +, Gać, *F-G*, 0, VII-VIII 1997, VII 1998; on *A. sativa*, Czolpino, *M-Sa*, 0, Kluki, *C-P*, +, Gać, *F-G*, 0, IX 1997, VIII 1998; on *Ballota nigra*, Gać, *F-G*, 0, VII 1998; on *Bromus inermis*, Kluki, *C-P*, +, Gać, *F-G*, +, VIII 1997, VIII 1998; on *B. hordeaceus*, Dolgie Duże, *Rn-A*, 0, VII 1996; on *B. sterilis*, Dolgie Duże, *Rn-A*, 0, Czolpino, *M-Sa*, 0, Kluki, *C-P*, 0, VIII-IX 1997, VII 1998; on *Calamagrostis epigejos*, NE Gardno, *B-Qr*, +, Kluki, *C-P*, 0, VIII 1998; on *Calystegia sepium*, Gać, *F-G*, 0, VII 1998; on *Campanula rapunculoides*, Czolpino, *M-Sa*, +, VII 1998; on *Capsella bursa-pastoris*, Gać, *F-G*, +, VIII-IX 1998; on *Centaurea cyanus*, Gać, *F-G*, + +, VII-VIII 1998; on *C. scabiosa*, Kluki, *C-P*, 0, IX 1998; on *Cerastium sylvaticum*, Czolpino, *M-Sa*, 0, IX 1998; on *Cerastium holosteoides*, Gać, *F-G*, 0, IX 1998; on *Chaerophyllum temulum*, Dolgie Małe, *Bp*, +, IX 1997, VII 1998; on *Cichorium intybus*, Gać, *F-G*, 0, IX 1998; on *Cirsium oleraceum*, Gać, *F-G*, 0, VIII 1998; on *Comarum palustre*, Dolgie Duże, *Rn-A*, 0, VII 1998; on *Convallaria majalis*, Dolgie Małe, *Bp*, 0, VIII 1997; on *Convolvulus arvensis*, Gać, *F-G*, +, VIII 1996, VII 1997; on *Crepis paludosa*, Kluki, *C-P*, 0, IX 1997; on *Dactylis glomerata*, NE Gardno, *B-Qr*, +, Dolgie Małe, *Bp*, +, VII-VIII 1996, VII-VIII 1997, VII-VIII 1998; on *Deschampsia flexuosa*, Dolgie Małe, *Bp*, 0, VII 1998; on *Elymus arenarius*, Czolpino, *M-Sa*, + +, VIII 1997, VIII 1998; on *Epilobium roseum*, Czolpino, *M-Sa*, +, VIII-IX 1998; on *Equisetum arvense*, Gać, *F-G*, 0, VIII 1998; on *Conyza canadensis*, Kluki, *C-P*, 0, IX 1998; on *Euphorbia helioscopia*, Gać, *F-G*, +, VIII 1998; *Odontites serotina*, Czolpino, *M-Sa*, 0, IX 1998; on *Festuca heterophylla*, Czolpino, *M-Sa*, 0, VII 1998; on *F. pratensis*, Kluki, *C-P*, 0, Gać, *F-G*, 0, VII, IX 1996; on *F. rubra*, Kluki, *C-P*, +, Gać, *F-G*, 0, VIII 1997, VIII-IX 1998; on *Galeobdolon luteum*, Dolgie Duże, *Rn-A*, 0, VIII 1997; on *Galeopsis tetrahit*, NE Gardno, *B-Qr*, 0, Dolgie Małe, *Bp*, 0, Dolgie Duże, *Rn-A*, 0, VIII 1996, IX 1998; on *Galinsoga*

*parviflora*, Kluki, C-P, 0, Gać, F-G, 0, VIII-IX 1998; on *Galium aparine*, NE Gardno, B-Qr, +, Kluki, C-P, 0, Gać, F-G, +, VII- VIII 1998; on *G. saxatile*, Kluki, C-P, 0, VIII 1998; on *G. uliginosum*, Gać, F-G, 0, IX 1998; on *Geranium pusillum*, Gać, F-G, 0, VII 1997; on *G. robertianum*, Gać, F-G, 0, VII 1997; on *Geum urbanum*, Czolpino, M-Sa, ++, VII 1996, VIII-IX 1998; on *Gnaphalium luteo-album*, Kluki, C-P, 0, VIII 1998; on *G. sylvaticum*, Kluki, C-P, 0, IX 1998; on *G. uliginosum*, Kluki, C-P, 0, IX 1998; on *Helichrysum arenarium*, Czolpino, M-Sa, 0, IX 1998; on *Hieracium sabaudum*, NE Gardno, B-Qr, +, Dolgie Male, Bp, +, Dolgie Duże, Rn-A, 0, VIII 1998; on *H. laevigatum*, NE Gardno, B-Qr, ++, VIII 1996, IX 1998; on *Holcus lanatus*, Kluki, C-P, ++, VII-VIII 1996; on *H. mollis*, NE Gardno, B-Qr, 0, VIII 1998; on *Hypericum perforatum*, Dolgie Duże, Rn-A, 0, VIII 1998; on *Knautia arvensis*, Czolpino, M-Sa, 0, IX 1998; on *Lamium maculatum*, NE Gardno, B-Qr, 0, VII 1998; on *L. purpureum*, NE Gardno, B-Qr, 0, IX 1998; on *Lapsana communis*, Czolpino, M-Sa, +, VIII 1996, VII 1998; on *Lathyrus montanus*, Gać, F-G, +, IX 1998; on *L. pratensis*, Gać, F-G, 0, IX 1998; on *Linaria vulgaris*, Dolgie Male, Bp, ++, VIII-IX 1998; on *Lolium multiflorum*, Czolpino, M-Sa, 0, IX 1996; on *L. perenne*, Kluki, C-P, ++, Gać, F-G, +++, VIII-IX 1997, VII-VIII 1998; on *Lotus corniculatus*, Czolpino, M-Sa, 0, Kluki, C-P, 0, IX 1998; on *L. uliginosus*, Gać, F-G, 0, VII 1996; on *Lupinus luteus*, Czolpino, M-Sa, 0, Gać, F-G, 0, VIII 1996, VIII 1998; on *Maianthemum bifolium*, Dolgie Duże, Rn-A, +, VIII 1998; on *Malva sylvestris*, Gać, F-G, 0, IX 1998; on *Chamomilla suaveolens*, Gać, F-G, +, IX 1998; on *Melandrium album*, Dolgie Male, Bp, +++, VIII 1997, IX 1998; on *Melilotus alba*, Kluki, C-P, +++, IX 1997, IX 1998; on *Mentha arvensis*, Kluki, C-P, ++, IX 1998; on *Molinia caerulea*, Dolgie Male, Bp, ++, VIII 1998; on *Myosotis arvensis*, Czolpino, M-Sa, +++, Kluki, C-P, 0, VIII 1998; on *Oenothera biennis*, Gać, F-G, 0, IX 1998; on *Oxalis acetosella*, NE Gardno, B-Qr, +++, VII-VIII 1996, VIII 1998; on *Papaver rhoeas*, NE Gardno, B-Qr, 0, Kluki, C-P, ++, VII, IX 1998; on *Phalaris arundinacea*, Dolgie Male, Bp, 0, IX 1998; on *Pheum pratense*, Kluki, C-P, +, Gać, F-G, 0, VII-VIII 1998; on *Plantago lanceolata*, Kluki, C-P, ++, IX 1997, VII 1998; on *P. major*, Kluki, C-P, 0, Gać, F-G, 0, IX 1997, VII 1998; on *Poa trivialis*, Dolgie Duże, Rn-A, 0, IX 1998; on *Polygonatum multiflorum*, NE Gardno, B-Qr, +, VIII 1997, VIII 1998; on *Polygonum persicaria*, Czolpino, M-Sa, ++, Kluki, C-P, 0, VIII-IX 1998; on *Quercus robur*, NE Gardno, B-Qr, 0, VIII 1998; on *Ranunculus acris*, Kluki, C-P, 0, VIII 1996; on *R. repens*, NE Gardno, B-Qr, 0, Kluki, C-P, 0, VII, IX 1998; on *Rhinantus serotinus*, Kluki, C-P, 0, VIII 1998; on *Rosa canina*, Czolpino, M-Sa, 0, VII 1998; on *Rubus idaeus*, Dolgie Male, Bp, ++, VII 1998; on *Rumex acetosa*, Kluki, C-P, 0, VIII 1998; on *R. conglomeratus*, Kluki, C-P, 0, VII 1998; on *R. hydrolapathum*, S Gardno, Pa, 0, Dolgie Duże, Rn-A, 0, VII, IX 1998; on *R. sanguineus*, Dolgie Duże, Rn-A, 0, IX 1998; on *Sambucus nigra*, Kluki, C-P, +, VII, IX 1998; on

*Scirpus sylvaticus*, Kluki, C-P, 0, VIII 1998; on *Scutellaria hastifolia*, Czolpino, M-Sa, 0, IX 1997; on *Senecio fuchsii*, Gać, F-G, 0, VII 1996; on *S. vernalis*, NE Gardno, B-Qr, ++, IX 1998; on *S. vulgaris*, Kluki, C-P, 0, IX 1998; on *Silene vulgaris*, Dolgie Duże, Rn-A, 0, IX 1997; on *Sinapis arvensis*, Gać, F-G, 0, VII 1998; on *Sisymbrium officinale*, Gać, F-G, + + +, VIII-IX 1998; on *Sonchus arvensis*, Dolgie Małe, Bp, ++, VII-VIII 1998; on *Sorbus aucuparia*, NE Gardno, B-Qr, 0, VII 1998; on *Symphytum officinale*, Kluki, C-P, 0, VIII 1998; on *Tanacetum vulgare*, Gać, F-G, 0, IX 1997; on *Taraxacum officinale*, NE Gardno, B-Qr, +, Dolgie Duże, Rn-A, 0, Czolpino, M-Sa, 0, Kluki, C-P, 0, Gać, F-G, 0, VII 1996, VII-IX 1997, IX 1998; on *Thlaspi arvense*, Gać, F-G, 0, VIII 1998; on *Torilis japonica*, Dolgie Duże, Rn-A, +, VII, IX 1998; on *Tragopogon pratensis*, Dolgie Duże, Rn-A, 0, IX 1998; on *Trifolium arvense*, Czolpino, M-Sa, +, VIII-IX 1998; on *T. repens*, Gać, F-G, 0, VII 1998; on *Urtica dioica*, Dolgie Małe, Bp, 0, Dolgie Duże, Rn-A, +, Czolpino, M-Sa, 0, VII 1996, IX 1998; on *U. urens*, Kluki, C-P, 0, IX 1998; on *Vaccinium myrtillus*, NE Gardno, B-Qr, 0, IX 1998; on *Veronica montana*, Dolgie Duże, Rn-A, 0, IX 1998; on *Vicia cracca*, Kluki, C-P, 0, Gać, F-G, 0, VII 1996, VII 1997; on *V. hirsuta*, Kluki, C-P, 0, VIII 1998; on *V. sativa*, Czolpino, M-Sa, 0, Kluki, C-P, 0, VIII 1996, IX 1998; on *V. sepium*, Gać, F-G, 0, VIII 1997; on *V. tetrasperma*, Kluki, C-P, 0, IX 1998; on *Viola arvensis*, Dolgie Małe, Bp, +, VIII 1998; on *V. canina*, Dolgie Duże, Rn-A, 0, IX 1998; on *V. tricolor*, Dolgie Małe, Bp, ++, VIII 1998. Found in the mitomorphic stage *Alternaria alternata* (Fr.) Kreisler.

*Coleroa circinans* (Fr.:Fr.) Wint. — on *Geranium robertianum*, Kluki, C-P, ++, IX 1996.

*Didymella applanata* (Niessl) Sacc. — on *Rubus idaeus*, Dolgie Małe, Bp, + + +, IX 1998.

*Elsinoë veneta* (Burk.) Jenk. — on *Rubus plicatus*, Dolgie Małe, Bp, + + +, VII 1996.

*Guignardia reticulata* (DC.:Fr.) van der Aa — on *Convallaria majalis*, Dolgie Małe, Bp, 0, VIII 1998; on *Maianthemum bifolium*, Dolgie Duże, Rn-A, +, VIII 1998; on *Polygonatum multiflorum*, NE Gardno, B-Qr, +, IX 1997, VIII 1998. Found in the mitomorphic stage *Phyllosticta convallariae* Pers.: Fr. There are no records of this fungus from *C. majalis* and *M. bifolium* growing in Poland. A parasite or saprotroph of many plants of the family Liliaceae, especially of the genera *Convallaria* and *Polygonatum* (Arx 1987).

*Herpotrichia juniperi* (Duby) Petrak — on *Juniperus communis*, Dolgie Małe, Bp, +, VII 1996.

*Mycosphaerella epilobii-montani* Lob. — on *Plantago lanceolata*, Gać, F-G, + + +, IX 1996; on *Epilobium montanum*, Dolgie Małe, Bp, +, VIII-IX 1996. No earlier literature data is on the existence of this fungus in Poland, although Brandenburger (1985) considered it to occur in the Middle Europe.

- Mycosphaerella killiani* Petr. — on *Trifolium pratense*, Gać, *F-G*, +, VIII 1996; on *Trifolium repens*, Kluki, *C-P*, +, VIII 1997. Found in the mitomorphic stage *Polythrincium trifolii* Kunze ex Fizinus et Schubert.
- Mycosphaerella macrospora* (Kleb.) Jorst. — on *Iris pseudacorus*, S Gardno, *Pa*, ++, VIII–IX 1996, VIII–IX 1998. Found in the mitomorphic stage *Cladosporium iridis* (Fautr. et Roum.) Vries.
- Mycosphaerella podagrariae* (Fr.) Petrak — on *Aegopodium podagraria*, NE Gardno, *B-Qr*, +, Gać, *F-G*, ++, IX 1997, VIII–IX 1998. Found in the mitomorphic stage *Septoria aegopodii* Desmaz.
- Mycosphaerella ranunculi* (Karst.) Lind — on *Ranunculus acris*, Kluki, *C-P*, +, IX 1998. On *R. acris* in Ojców National Park (Kućmierz 1971, 1973).
- Mycosphaerella rubi* (West.) Roark. — on *Rubus plicatus*, Dołgie Male, *Bp*, +, VII–VIII 1996. Found in the mitomorphic stage *Septoria rubi* West. On *R. plicatus* in Krynica and the Beskid Sądecki (S t a r m a c h o w a 1966).
- Mycosphaerella superflua* (Auers.) Petr. — on *Urtica dioica*, Dołgie Duże, *Rn-A*, +, Czolpino, *M-Sa*, +, Gać, *F-G*, +, VII 1996, VIII 1997, VII 1998; on *U. urens*, Gać, *F-G*, 0, IX 1998. Found in the mitomorphic stage *Ramularia urticae* Ces.
- Mycosphaerella tassiana* (de Not.) Johanson — on *Carex spicata*, Czolpino, *M-Sa*, +, VIII 1997; on *Holcus lanatus*, Kluki, *C-P*, +, VII–VIII 1996; on *Phleum pratense*, Gać, *F-G*, +, VII 1996. Found in the mitomorphic stage *Cladosporium herbarum* (de Not.) Johanson.
- Pleospora herbarum* (Fr. ex Fr.) Rob. — on *Berteroa incana*, Kluki, *C-P*, +, Gać, *F-G*, 0, VIII–IX 1997; on *Lupinus luteus*, Czolpino, *M-Sa*, 0, VIII 1996; on *Melandrium album*, Dołgie Male, *Bp*, 0, VIII 1997; on *Sisymbrium officinale*, Gać, *F-G*, 0, VII 1998. Found in the mitomorphic stage *Alternaria brassicae* (Berk.) Sacc. and *Stemphylium botryosum* Wallr.
- Pyrenophora avenae* S. Ito et Kuribay — on *Avena fatua*, Dołgie Male, *Bp*, +, VIII 1997. Found in the mitomorphic stage *Drechslera avenae* (Eidam.) Scharif.
- Pyrenophora bromi* (Died.) Drechsl. — on *Bromus hordeaceus*, Dołgie Duże, *Rn-A*, 0, VII 1996; on *B. inermis*, Gać, *F-G*, 0, VIII 1997. Found only in the mitomorphic stage *Drechslera bromi* (Died.) Shoem.
- Pyrenophora calvescens* Sacc. — on *Papaver rhoeas*, Kluki, *C-P*, 0, VIII 1998. Found in the mitomorphic stage *Helminthosporium papaveris* Henn.
- Pyrenophora graminea* (Died.) Ito et Kurib. — on *Agropyron repens*, S Gardno, *Pa*, +, Gać, *F-G*, +, VIII 1996, VII 1997; on *Alopecurus pratensis*, Kluki, *C-P*, +, VII 1997; on *Arrhenatherum elatius*, Gać, *F-G*, 0, VIII 1997; on *Avena fatua*, Dołgie Male, *Bp*, 0, VII 1997; on *A. sativa*, Czolpino, *M-Sa*, +, Kluki, *C-P*, 0, IX 1997; on *Calamagrostis epigejos*, NE Gardno, *B-Qr*, +, Kluki, *C-P*, 0, VIII 1996, VIII 1998; on *Cynosurus cristatus*, Gać, *F-G*, 0, VII 1997; on *Dactylis glomerata*, NE Gardno, *B-Qr*, +, Dołgie Male, *Bp*, +, VIII–IX 1996, VII 1997, VIII 1998; on *Holcus lanatus*, Kluki, *C-P*, +, VII–VIII 1996; on *Lolium perenne*, Kluki, *C-P*, 0, VIII 1997, VIII 1998; on

*Molinia caerulea*, Dolgie Male, *Bp*, 0, VIII 1998; on *Poa trivialis*, Dolgie Male, *Bp*, +, Kluki, *C-P*, 0, VII 1996, VII 1997. Found in the mitomorphic stage *Drechslera graminea* (Rabenh. ex Schlecht.) Shoem.

*Venturia populina* (Vuill.) Fabr. – on *Populus tremula*, Czolpino, *M-Sa*, +, VII 1996.

### ERYSIPHALES

*Blumeria graminis* (DC.) Speer – on *Agropyron repens*, S Gardno, *Pa*, +, Kluki, *C-P*, ++, Gać, *F-G*, ++, VII–IX 1997, VII–IX 1998; on *Agrostis stolonifera*, Kluki, *C-P*, 0, VIII 1998; on *A. capillaris*, NE Gardno, *B-Qr*, ++, VII–VIII 1996, VII 1997, VIII 1998; on *Alopecurus myosuroides*, Kluki, *C-P*, +, VIII–IX 1998; on *A. pratensis*, Kluki, *C-P*, +, Gać, *F-G*, 0, VIII 1996, VII 1997, IX 1998; on *Arrhenatherum elatius*, Czolpino, *M-Sa*, ++, Gać, *F-G*, 0, VIII–IX 1997; on *Avena fatua*, Dolgie Male, *Bp*, 0, Gać, *F-G*, +, VIII 1997, VII 1998; on *A. sativa*, Gać, *F-G*, +, VIII 1998; on *Bromus hordeaceus*, Dolgie Duże, *Rn-A*, +, Czolpino, *M-Sa*, +, VII–VIII 1997, VIII 1998; on *B. inermis*, Dolgie Duże, *Rn-A*, +, Kluki, *C-P*, 0, VII–VIII 1997; on *B. sterilis*, Kluki, *C-P*, +, VII–VIII 1998; on *Calamagrostis epigejos*, NE Gardno, *B-Qr*, +, Kluki, *C-P*, 0, VIII 1998; on *Cynosurus cristatus*, Gać, *F-G*, 0, VII 1997; on *Dactylis glomerata*, NE Gardno, *B-Qr*, ++, Dolgie Male, *Bp*, 0, IX 1996, VII–IX 1997, VII–VIII 1998; on *Festuca heterophylla*, Czolpino, *M-Sa*, 0, VII 1998; on *F. pratensis*, Kluki, *C-P*, +, VII 1996, VII 1997; on *F. rubra*, Dolgie Duże, *Rn-A*, 0, Kluki, *C-P*, +, Gać, *F-G*, 0, VII 1996, VII–VIII 1997, VIII–IX 1998; on *Glyceria maxima*, Gać, *F-G*, 0, VIII 1998; on *Holcus lanatus*, Kluki, *C-P*, +, VIII 1996, IX 1998; on *Hordeum murinum*, Gać, *F-G*, ++, VII 1998; on *Lolium multiflorum*, Czolpino, *M-Sa*, +, VII 1997; on *L. perenne*, Kluki, *C-P*, +, Gać, *F-G*, +, VII–VIII 1997, VII–VIII 1998; on *Milium effusum*, Dolgie Duże, *Rn-A*, +, VIII–IX 1997; on *Molinia caerulea*, Dolgie Male, *Bp*, +, VIII 1998; on *Phalaris arundinacea*, Dolgie Duże, *Rn-A*, +, VIII 1998; on *Phleum pratense*, Gać, *F-G*, ++, VIII–IX 1998; on *Poa annua*, Dolgie Duże, *Rn-A*, +, VII 1997, VIII 1998; on *P. pratensis*, Dolgie Duże, *Rn-A*, +, Gać, *F-G*, +, VII–VIII 1997, VII–IX 1998; on *P. trivialis*, Kluki, *C-P*, +, VII 1997, IX 1998.

*Erysiphe aquilegiae* DC. var. *ranunculi* (Grev.) Zheng et Chen – on *Anemone nemorosa*, NE Gardno, *B-Qr*, 0, IX 1997; on *Ranunculus acris*, Kluki, *C-P*, ++, Gać, *F-G*, ++, VIII 1996, VIII–IX 1998; on *R. arvensis*, Dolgie Male, *Bp*, +, VIII 1998; on *R. repens*, NE Gardno, *B-Qr*, +, Kluki, *C-P*, +, VII 1996, VII, IX 1998.

*Erysiphe artemisiae* Grev. – on *Artemisia vulgaris*, Gać, *F-G*, +, VIII 1996, VII–IX 1997, VII–IX 1998.

*Erysiphe biocellata* Ehrenb. – on *Mentha arvensis*, Gać, *F-G*, +, IX 1998; on *Mentha x citrata* subsp. *citrata*, Kluki, *C-P*, +, IX 1998.



- Erysiphe buhrii* U. Braun – on *Melandrium album*, Dolgie Male, Bp, ++, IX 1998.
- Erysiphe cichoracearum* DC. var. *cichoracearum* – on *Achillea millefolium*, Kluki, C-P, +, IX 1997; on *A. ptarmica*, Czolpino, M-Sa, ++, Kluki, C-P, +, Gać, F-G, 0, VIII–IX 1998; on *Centaurea jacea*, Gać, F-G, ++, IX 1998; on *Cichorium intybus*, Kluki, C-P, +, Gać, F-G, ++, IX 1997, VII, IX 1998; on *Cirsium oleraceum*, Kluki, C-P, +, VIII 1996; on *Crepis paludosa*, Kluki, C-P, 0, IX 1997; on *Hieracium laevigatum*, NE Gardno, B-Qr, +, VIII 1996, IX 1998; on *H. sabaudum*, NE Gardno, B-Qr, +, Dolgie Male, Bp, ++, Dolgie Duże, Rn-A, +, VIII 1998; on *Lapsana communis*, Dolgie Male, Bp, ++, Dolgie Duże, Rn-A, + + +, Czolpino, M-Sa, + + +, Kluki, C-P, + + +, VII–IX 1996, VIII 1997, VIII–IX 1998; on *Senecio jacobaea*, Dolgie Duże, Rn-A, 0, VIII 1998; on *Senecio sp.*, Dolgie Duże, Rn-A, + +, IX 1996; on *S. vernalis*, NE Gardno, B-Qr, + +, IX 1998; on *Solidago canadensis*, Gać, F-G, + +, IX 1997, VII–VIII 1998; on *S. virgaurea*, Kluki, C-P, +, VIII–IX 1996; on *Sonchus arvensis*, Dolgie Male, Bp, + +, VIII 1997, VIII 1998; on *S. oleraceus*, NE Gardno, B-Qr, 0, VIII 1998; on *Tanacetum vulgare*, Gać, F-G, + + +, VIII–IX 1997, VII–IX 1998; on *Tragopogon pratensis*, Dolgie Duże, Rn-A, + +, VII–IX 1997, IX 1998.
- Erysiphe convolvuli* DC. var. *calystegiae* U. Braun – on *Calystegia sepium*, Kluki, C-P, +, IX 1998.
- Erysiphe convolvuli* DC. var. *convolvuli* – on *Convolvulus arvensis*, Czolpino, M-Sa, + +, Gać, F-G, + + +, VIII 1996, IX 1997, VII, IX 1998.
- Erysiphe cruciferarum* Opiz ex Junell – on *Berteroa incana*, Gać, F-G, + +, IX 1997, IX 1998; on *Capsella bursa-pastoris*, Gać, F-G, +, VII–VIII 1998; on *Papaver rhoeas*, NE Gardno, B-Qr, 0, IX 1998; on *Raphanus raphanistrum*, Gać, F-G, 0, IX 1997; on *Sisymbrium officinale*, Gać, F-G, + +, VIII 1996, VII–IX 1998.
- Erysiphe cynoglossi* (Wallr.) U. Braun – on *Anchusa officinalis*, Kluki, C-P, + +, IX 1998; on *Echium vulgare*, Kluki, C-P, +, IX 1998; on *Myosotis arvensis*, Kluki, C-P, + + +, VII–VIII 1997, VIII–IX 1998.
- Erysiphe depressa* (Wallr.) Schlecht. – on *Arctium lappa*, Czolpino, M-Sa, + + +, Kluki, C-P, + + +, IX 1996, VIII–IX 1997, IX 1998; on *A. minus*, Gać, F-G, + +, VIII 1996; on *A. tomentosum*, Gać, F-G, + +, VIII 1996, IX 1998.
- Erysiphe galeopsidis* DC. – on *Ballota nigra*, Gać, F-G, + +, VII–VIII 1998; on *Galeobdolon luteum*, Dolgie Duże, Rn-A, + +, VIII 1997; on *Galeopsis tetrahit*, NE Gardno, B-Qr, + + +, Dolgie Male, Bp, + + +, Dolgie Duże, Rn-A, + + +, VII–VIII 1996, VII–IX 1997, VIII–IX 1998; on *Lamium maculatum*, NE Gardno, B-Qr, 0, IX 1998; on *L. purpureum*, NE Gardno, B-Qr, 0, VII–IX 1997, VII, IX 1998; on *Stachys sylvatica*, Dolgie Duże, Rn-A, +, IX 1998.
- Erysiphe galii* Blumer var. *galii* – on *Galium aparine*, NE Gardno, B-Qr, + +, Kluki, C-P, + +, Gać, F-G, + + +, VII–VIII 1996, VIII 1997, VII–VIII 1998.

- Erysiphe heraclei* DC. – on *Angelica sylvestris*, Dolgje Duže, Rn-A, +, IX 1998; on *Anthriscus sylvestris*, Dolgje Male, Bp, +, VII–VIII 1997, VII, IX 1998; on *Chaerophyllum temulum*, Dolgje Male, Bp, +, VIII–IX 1997, VII 1998; on *Conium maculatum*, Czolpino, M-Sa, ++, VIII 1996; on *Heracleum sphondylium*, Kluki, C-P, + + +, Gač, F-G, ++, VII–VIII 1997, VII, IX 1998; on *Petroselinum crispum*, Kluki, C-P, 0, IX 1998; on *Torilis japonica*, Dolgje Duže, Rn-A, +, IX 1997, VII, IX 1998.
- Erysiphe knautiae* Duby – on *Succisa pratensis*, Dolgje Duže, Rn-A, 0, VII 1996.
- Erysiphe mayorii* Blumer var. *mayorii* – on *Cirsium arvense*, NE Gardno, B-Qr, ++, Dolgje Duže, Rn-A, ++, VII–VIII 1996, VII–IX 1998.
- Erysiphe orontii* Cast. – on *Linaria vulgaris*, Dolgje Male, Bp, +, VIII 1998; on *Veronica montana*, Dolgje Duže, Rn-A, +, VIII 1998; on *Viola arvensis*, Dolgje Male, Bp, 0, VII 1997; on *Viola tricolor*, Dolgje Male, Bp, ++, VIII 1998.
- Erysiphe pisi* DC. var. *pisi* – on *Lathyrus montanus*, Gač, F-G, +, IX 1998; on *L. pratensis*, Gač, F-G, 0, IX 1998; on *Lotus corniculatus*, Czolpino, M-Sa, 0, IX 1998; on *L. uliginosus*, Kluki, C-P, +, IX 1998; on *Lupinus luteus*, Czolpino, M-Sa, + + + +, VIII 1996, IX 1997, VIII–IX 1998; on *L. polyphyllus*, Kluki, C-P, +, VIII 1998; on *Melilotus alba*, Kluki, C-P, + + +, VIII 1996, IX 1997, VIII–IX 1998; on *Pisum* sp., Gač, F-G, 0, VIII 1998; on *Vicia cracca*, Gač, F-G, ++, VIII 1996, VIII 1997; on *V. hirsuta*, Kluki, C-P, +, VIII 1998; on *V. sativa*, Kluki, C-P, +, IX 1998.
- Erysiphe polygoni* DC. – on *Polygonum amphibium*, Kluki, C-P, +, IX 1998; on *P. aviculare*, Kluki, C-P, + + +, Gač, F-G, ++, VIII 1996, VII–IX 1997, VII, IX 1998; on *P. persicaria*, Kluki, C-P, +, VIII 1998; on *Rumex acetosella*, Dolgje Male, Bp, 0, Gač, F-G, +, VIII 1998; on *R. conglomeratus*, Dolgje Duže, Rn-A, +, VII 1997; on *R. hydrolapathum*, S Gardno, Pa, 0, VII 1998; on *R. obtusifolius*, Gač, F-G, 0, IX 1997.
- Erysiphe sordida* Junell – on *Plantago major*, Kluki, C-P, + + +, Gač, F-G, + + +, VIII–IX 1996, VII–IX 1997, VII, IX 1998.
- Erysiphe urticae* (Wallr.) Blumer – on *Urtica dioica*, Dolgje Duže, Rn-A, ++, Czolpino, M-Sa, +, Gač, F-G, ++, VIII–IX 1996, VIII–IX 1997, VII, IX 1998; on *U. urens*, Kluki, C-P, 0, IX 1998.
- Microsphaera alphitoides* Griff. et Maubl. var. *alphitoides* – on *Quercus robur*, NE Gardno, B-Qr, + + +, VII, IX 1996, VII–IX 1997, VII–IX 1998; on *Q. petraea*, Czolpino, M-Sa, + + +, VII–IX 1996, VIII–IX 1997, IX 1998.
- Microsphaera hypericacearum* U. Braun – on *Hypericum perforatum*, Dolgje Duže, Rn-A, ++, Czolpino, M-Sa, +, VII–IX 1996, VIII 1998.
- Microsphaera ornata* U. Braun var. *europaea* – on *Betula pubescens* (Fig. 2a), Dolgje Male, Bp, ++, IX 1997, IX 1998.
- Microsphaera syringae* (Schw.) Magn. – on *Syringa vulgaris* (Fig. 2b), Dolgje Duže, Rn-A, 0, VIII 1996.

- Microsphaera trifolii* (Grev.) U. Braun var. *trifolii* – on *Trifolium alpestre*, Kluki, C-P, +, VIII 1996; on *T. medium*, Gać, F-G, +, VII 1997; on *T. pratense*, NE Gardno, B-Qr, +, Kluki, C-P, ++, Gać, F-G, ++, VIII–IX 1996, IX 1997, VIII–IX 1998; on *T. repens*, Kluki, C-P, ++, Gać, F-G, +, VIII 1996, VIII 1997, VII 1998.
- Microsphaera vanbruntiana* Gerard var. *sambuci-racemosae* U. Braun – on *Sambucus racemosa* (Fig. 3a-d), Kluki, C-P, ++, IX 1996, VII, IX 1998.
- Phyllactinia guttata* (Wallr.: Fr.) Lev. – on *Carpinus betulus*, Dolgie Duże, Rn-A, 0, VII–VIII 1998.
- Podosphaera clandestina* (Wallr.: Fr.) var. *aucupariae* (Erikss.) U. Braun – on *Sorbus aucuparia* (Fig. 4a-d), NE Gardno, B-Qr, ++, VII–IX 1998.
- Podosphaera clandestina* (Wallr.: Fr.) var. *clandestina* – on *Crataegus monogyna* (Fig. 2c), Gać, F-G, ++, VII 1997, IX 1998.
- Podosphaera myrtillina* (Schub.: Fr.) Kunze var. *myrtillina* – on *Vaccinium myrtillus*, Czolpino, M-Sa, ++, IX 1996.
- Podosphaera tridactyla* (Wallr.) de Bary var. *tridactyla* – on *Padus avium*, Gać, F-G, 0, IX 1998.
- Sawadea bicornis* (Wallr. ex Fr.) Lev. – on *Acer campestre*, Czolpino, M-Sa, +, IX 1997, VII–VIII 1998; on *A. negundo*, Czolpino, M-Sa, ++, VIII–IX 1996, VII–VIII 1997, VII 1998.
- Sawadea tulasnei* (Fuck.) Homma – on *Acer platanoides*, Dolgie Duże, Rn-A, + + +, Czolpino, M-Sa, ++, VIII 1996, VII–IX 1998.
- Sphaerotheca aphanis* (Wallr.) U. Braun var. *aphanis* – on *Alchemilla monticola*, Dolgie Duże, Rn-A, +, VIII–IX 1998; on *Comarum palustre*, Dolgie Duże, Rn-A, +, VII 1998; on *Geum urbanum*, Czolpino, M-Sa, +, VII–VIII 1997, VIII 1998; on *Potentilla reptans*, NE Gardno, B-Qr, +, Dolgie Małe, Bp, 0, VII–VIII 1998; on *Rubus idaeus*, Dolgie Małe, Bp, 0, VIII 1996; on *R. plicatus*, Dolgie Małe, Bp, + +, VIII–IX 1996, VIII–IX 1997, VII–IX 1998.
- Sphaerotheca balsaminae* (Wallr.) Kari – on *Impatiens noli-tangere*, Dolgie Duże, Rn-A, + +, VIII 1997, VIII 1998; on *I. parviflora*, Kluki, C-P, 0, VIII 1998.
- Sphaerotheca epilobii* (Wallr.) Sacc. – on *Epilobium hirsutum*, Gać, F-G, +, VIII 1998; on *E. roseum*, Czolpino, M-Sa, 0, IX 1998.
- Sphaerotheca euphorbiae* (Cast.) Salmon – on *Euphorbia helioscopia*, Gać, F-G (Fig. 2d), +, VII 1998; on *E. peplus*, Kluki, C-P, 0, IX 1998.
- Sphaerotheca fugax* Penz. et Sacc. – on *Geranium dissectum*, Dolgie Małe, Bp, 0, VIII 1997; on *G. pusillum*, Gać, F-G, +, VII 1997; on *G. robertianum*, Gać, F-G, +, VII 1997.
- Sphaerotheca fusca* (Fr.) Blumer – on *Chamomilla suaveolens*, Gać, F-G (Fig. 2c), + + +, IX 1998; on *Cirsium oleraceum*, Gać, F-G, +, IX 1998; on *Euphrasia micrantha*, Kluki, C-P, + + +, IX 1998; on *Lapsana communis*, Dolgie Małe, Bp, +, Dolgie Duże, Rn-A, +, VII 1996, IX 1997; on *Melampyrum pratense*, NE Gardno, B-Qr, + +, Dolgie Małe, Bp, +, Dolgie

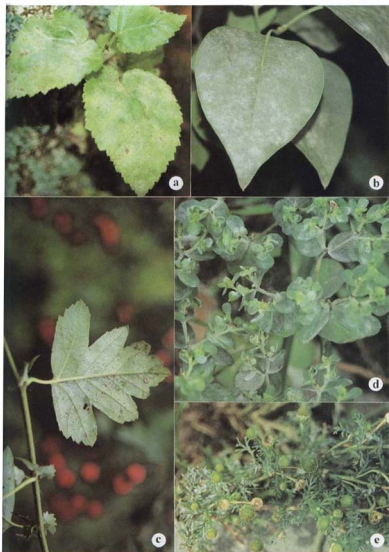


Fig. 2. Powdery mildews caused by: *Microsphaera ornata* var. *europaea* on *Betula pubescens* (a), *M. syringae* on *Syringa vulgaris* (b), *Podosphaera clandestina* var. *clandestina* on *Crataegus monogyna* (c), *Sphaerotheca euphorbiae* on *Euphorbia helioscopia* (d), *S. fusca* on *Chamomilla suaveolens* (e)

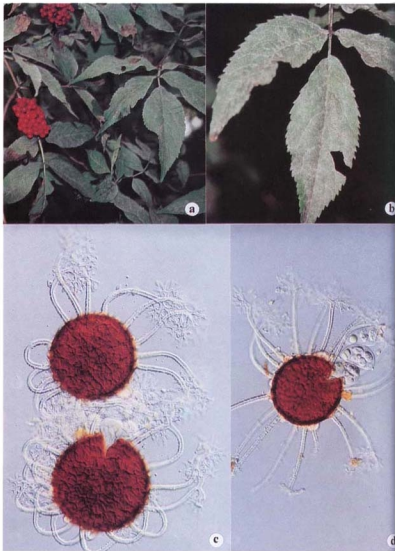


Fig. 3. *Microasphaera vanbruntiana* var. *sambuci-racemosae*: powdery mildews on leaves of *Sambucus racemosa* (a and b); cleistothecia with appendages, differential interference contrast (DIC),  $\times 330$  (c); crushed cleistothecium with asci and ascospores, DIC,  $\times 300$  (d)

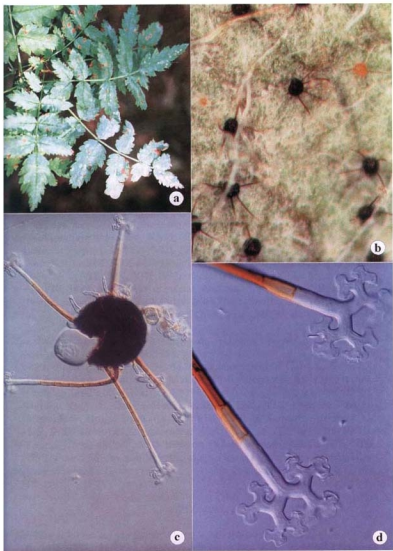


Fig. 4. *Podosphaera clandestina* var. *aucuparia*: powdery mildew on leaves of *Sorbus aucuparia* (a); cleistothecia on leaves of *S. aucuparia*, bright field microscopy,  $\times 60$  (b); crushed cleistothecium with ascus, differential interference contrast (DIC),  $\times 330$  (c); branched tips of appendages, DIC,  $\times 1300$  (d)

- Duże, *Rn-A*, ++, VII–VIII 1996, IX 1997, VII–IX 1998; on *Solidago canadensis*, Gać, *F-G*, +, VII 1997, VIII–IX 1998; on *Taraxacum officinale*, NE Gardno, *B-Qr*, + + +, Dolgie Duże, *Rn-A*, +, Czolpino, *M-Sa*, +, Kluki, *C-P*, ++, Gać, *F-G*, ++, IX 1996, VII–IX 1997, VII, IX 1998.
- Sphaerotheca macularis* (Wallr.: Fr.) Lind. – on *Humulus lupulus*, Kluki, *C-P*, ++, VII 1997, VII–IX 1998.
- Sphaerotheca mors-uvae* (Schw.) Berk. et Curt. – on *Ribes nigrum*, Dolgie Duże, *Rn-A*, 0, VIII 1998.
- Sphaerotheca pannosa* (Wallr.: Fr.) Lev. – on *Rosa canina*, Czolpino, *M-Sa*, ++, VII–VIII 1996, IX 1997, VII–VIII 1998.
- Sphaerotheca plantaginis* (Cast.) Junell – on *Plantago lanceolata*, Kluki, *C-P*, + + +, Gać, *F-G*, 0, VIII–IX 1997, IX 1998.

## HYPOCREALES

- Claviceps purpurea* Tul. – on *Agropyron repens*, Gać, *F-G*, ++, IX 1998; on *Anthoxanthum odoratum*, Kluki, *C-P*, +, VIII 1997; on *Arrhenatherum elatius*, Czolpino, *M-Sa*, 0, VIII 1997; on *Bromus inermis*, Kluki, *C-P*, +, Gać, *F-G*, 0, VIII 1997, VIII 1998; on *Calamagrostis epigejos*, NE Gardno, *B-Qr*, + + +, VIII 1996, VIII 1997; on *Dactylis glomerata*, Dolgie Małe, *Bp*, +, VIII 1997; on *Elymus arenarius*, Czolpino, *M-Sa*, +, VIII 1997; on *Festuca rubra*, Kluki, *C-P*, 0, IX 1998; on *Holcus mollis*, NE Gardno, *B-Qr*, 0, VII 1998; on *Poa pratensis*, Gać, *F-G*, +, VIII 1997; on *P. trivialis*, Dolgie Małe, *Bp*, +, IX 1997.
- Epichloë typhina* (Pers. ex Fr.) Tul. – on *Agropyron repens*, S Gardno, *Pa*, ++, Kluki, *C-P*, +, VII 1998.
- Gibberella zeae* (Schw.) Petch – on *Agropyron repens*, S Gardno, *Pa*, 0, IX 1997; on *Agrostis stolonifera*, Kluki, *C-P*, 0, VIII 1998; on *Avena sativa*, Czolpino, *M-Sa*, 0, Kluki, *C-P*, 0, IX 1997; on *Dactylis glomerata*, NE Gardno, *B-Qr*, 0, Dolgie Małe, *Bp*, 0, IX 1996, VIII 1997; on *Festuca heterophylla*, Dolgie Duże, *Rn-A*, 0, VIII 1998; on *Festuca pratensis*, Gać, *F-G*, 0, IX 1996; on *Festuca rubra*, Kluki, *C-P*, 0, VIII 1998; on *Holcus lanatus*, Kluki, *C-P*, +, VIII 1996; on *Phleum pratense*, Gać, *F-G*, 0, VIII 1998. Found in the mitomorphic stage *Fusarium graminearum* Schwabe.
- Nectria cinnabarina* (Tode ex Fr.) Fr. – on *Ribes* sp., Dolgie Duże, *Rn-A*, +, IX 1997.

## LEOTIALES

- Botryotinia fuckeliana* (de Bary) Whetz. – on *Alopecurus pratensis*, Gać, *F-G*, 0, VIII 1997; on *Arrhenatherum elatius*, Gać, *F-G*, 0, VIII 1997; on *Convallaria majalis*, Dolgie Małe, *Bp*, +, VIII 1998; on *Geranium dissectum*, Dolgie Małe, *Bp*, 0, VIII 1997; on *Geum urbanum*, Czolpino, *M-Sa*, 0, VIII 1998; on *Hieracium sabaudum*, Dolgie Małe, *Bp*, 0, VIII 1998; on *Polygona-*

- tum multiflorum*, NE Gardno, *B-Qr.* +, VIII, IX 1997, VIII 1998; on *Potentilla reptans*, Dolgie Male, *Bp.* 0, VIII 1998; on *Rosa canina*, Czolpino, *M-Sa.* +, VII 1998; on *Taraxacum officinale*, Kluki, *C-P.* 0, VIII 1997. Found in the mitomorphic stage *Botrytis cinerea* Pers.
- Diplocarpon rosae* F. A. Wolf — on *Rosa canina*, Czolpino, *M-Sa.* + + +, VII–IX 1996, VII 1997, VII 1998. Found in the mitomorphic stage *Marssonina rosae* F. A. Wolf.
- Leptotrochila ranunculi* (Fr.) Schüepp — on *Ranunculus acris*, Kluki, *C-P.* +, IX 1998. A parasite of many plants of the genus *Ranunculus* (Arx 1987). On *R. acris* in the Pieniny Mts. (K u ć m i e r z 1976a) and the Małopolska Upland (R o m a s z e w s k a - S a ł a t a 1981).
- Pseudopeziza trifolii* (Biv.-Bern. ex Fr.) Fuckel — on *Melilotus alba*, Kluki, *C-P.* +, IX 1997; on *Trifolium dubium*, Kluki, *C-P.* + +, IX 1997; on *T. montanum*, Gać, *F-G.* +, VIII 1996; on *T. pratense*, Kluki, *C-P.* + + +, Gać, *F-G.* + + +, IX 1996, IX 1997, VIII–IX 1998; on *T. repens*, Kluki, *C-P.* +, Gać, *F-G.* + +, VIII–IX 1996.
- Schizothyrioma ptarmicae* (Desm.) Hvh. — on *Achillea ptarmica*, Czolpino, *M-Sa.* +, Kluki, *C-P.* + +, IX 1996, IX 1998. The fungus was not recorded in Poland to date and has infrequently been found in Europe (E l l i s and E l l i s 1987).

### PHYLLACHORALES

- Phyllachora graminis* (Pers.) Nits. — on *Agropyron repens*, S Gardno, *Pa.* +, Kluki, *C-P.* + + +, Gać, *F-G.* + +, VIII 1996, VIII–IX 1997, VIII–IX 1998; on *Dactylis glomerata*, NE Gardno, *B-Qr.* +, VII 1998; on *Festuca rubra*, Kluki, *C-P.* + +, VIII 1997; on *Lolium perenne*, Kluki, *C-P.* +, VIII 1997; on *Poa trivialis*, Dolgie Male, *Bp.* +, VII 1996. Common on *A. repens* in SPN.

### RHYTISMATALES

- Lophodermium pinastri* (Schrad. ex Hook) Chev. — on *Pinus sylvestris*, Dolgie Male, *Bp.* +, VII, IX 1996, IX 1997.
- Rhytisma acerinum* (Pers. ex Saint Amans) Fr. — on *Acer platanoides*, Czolpino, *M-Sa.* + + +, VII–VIII 1996, VII–VIII 1997, VIII–IX 1998; on *A. pseudoplatanus*, Czolpino, *M-Sa.* + +, VIII–IX 1997.

### BASIDIOMYCOTA

#### CERATOBASIDIALES

- Thanatephorus cucumeris* (Frank) Donk — on *Tragopogon dubius*, Czolpino, *M-Sa.* 0, VII 1998.



## EXOBASIDIALES

*Exobasidium vaccini* (Fuck.) Woron. — on *Vaccinium vitis-idaea*, Dolgie Male, Bp, ++, IX 1998.

## UREDINALES

*Coleosporium senecionis* Kickx — on *Senecio fuchsii*, Gać, F-G, +, VII 1997.

*Coleosporium tussilaginis* (Pers.) Berk. — on *Campanula rapunculoides*, Czolpino, M-Sa, +, VII 1998; on *Melampyrum pratense*, NE Gardno, B-Qr, ++, Dolgie Male, Bp, +++, Dolgie Duże, Rn-A, ++, VII–VIII 1996, IX 1997, VII–IX 1998; on *Senecio jacobaea*, Dolgie Duże, Rn-A, +, VIII 1998; on *S. vernalis*, NE Gardno, B-Qr, +, IX 1998; on *S. vulgaris*, Kluki, C-P, +, IX 1998; on *Sonchus arvensis*, Dolgie Male, Bp, +, VIII–IX 1998; on *Tussilago farfara*, Dolgie Duże, Rn-A, ++, VIII 1996, VII 1998.

*Cronartium ribicola* J. C. Fischer — on *Ribes nigrum*, Dolgie Duże, Rn-A, +, Czolpino, M-Sa, +, VIII 1997, VIII–IX 1998.

*Gymnosporangium cornutum* Arth. — on *Sorbus aucuparia*, NE Gardno, B-Qr, ++, VII 1996, VII–IX 1998.

*Melampsora allii-fragilis* Kleb. — on *Salix fragilis*, Dolgie Duże, Rn-A, +, IX 1996.

*Melampsora amygdalinae* Kleb. — on *Salix triandra*, Czolpino, M-Sa, +, IX 1998.

*Melampsora caprearum* Thum. — on *Salix caprea*, Czolpino, M-Sa, ++, VIII 1996, VII–IX 1998.

*Melampsora epitea* Thum. — on *Salix aurita*, Dolgie Male, Bp, +, Dolgie Duże, Rn-A, +, VII 1998; on *S. cinerea*, Dolgie Duże, Rn-A, ++, Czolpino, M-Sa, +++, VIII 1996, VII–IX 1998.

*Melampsora euphorbiae* (Schubad) Cast. — on *Euphorbia helioscopia*, Gać, F-G, +, VIII–IX 1998; on *E. pepus*, Kluki, C-P, ++, Gać, F-G, +++, IX 1998.

*Melampsora hypericorum* Wint. — on *Hypericum perforatum*, Dolgie Duże, Rn-A, 0, Gać, F-G, 0, VIII–IX 1998.

*Melampsora larici-pentandrae* Kleb. — on *Salix pentandra*, Czolpino, M-Sa, 0, VIII 1998.

*Melampsora larici-populina* Kleb. — on *Populus nigra*, Czolpino, M-Sa, +, VIII–IX 1996.

*Melampsora populnea* (Pers.) Karst. — on *Papaver rhoeas*, NE Gardno, B-Qr, 0, Kluki, C-P, +, VII, IX 1998; on *Populus nigra*, Czolpino, M-Sa, +, VII 1996, VII 1997, IX 1998; on *P. tremula*, Czolpino, M-Sa, ++, VIII 1996, VIII–IX 1998.

*Melampsorella caryophyllacearum* Schroet. — on *Cerastium holosteoides*, Gać, F-G, +, IX 1998.

*Melampsorella symphyti* Bub. — on *Symphytum officinale*, Kluki, C-P, 0, IX 1998.

- Melampsorium betulinum* Kleb. — on *Betula pendula*, NE Gardno, *B-Qr*, ++, Dolgie Male, *Bp*, + + +, Dolgie Duże, *Rn-A*, ++, VII–IX 1996, IX 1997, VIII–IX 1998; on *B. pubescens*, Dolgie Male, *Bp*, ++, VIII 1996, VIII–IX 1998.
- Ochropsora ariae* (Fuck.) Ramsb. — on *Sorbus aucuparia*, NE Gardno, *B-Qr*, 0, VIII 1996.
- Phragmidium bulbosum* (Str.) Schlecht. — on *Rubus caesius*, Czolpino, *M-Sa*, +, VII 1998; on *R. plicatus*, Dolgie Male, *Bp*, +, Dolgie Duże, *Rn-A*, + + +, IX 1996, IX 1998.
- Phragmidium mucronatum* (Pers.) Schlecht. — on *Rosa canina*, Czolpino, *M-Sa*, + +, VIII–IX 1997, VII–VIII 1998.
- Phragmidium potentillae* (Pers.) Karst. — on *Comarum palustre*, Dolgie Duże, *Rn-A*, 0, VII 1998; on *Potentilla reptans*, NE Gardno, *B-Qr*, +, VII 1998.
- Phragmidium rubi-idaei* (DC.) Karst. — on *Rubus idaeus*, Dolgie Male, *Bp*, + +, IX 1996, VII 1998.
- Phragmidium tuberculatum* J. Mill. — on *Rosa canina*, Czolpino, *M-Sa*, +, VII 1998.
- Phragmidium violaceum* (Schultz) Wint. — on *Rubus plicatus*, Dolgie Duże, *Rn-A*, +, VIII 1998.
- Puccinia acetosae* Körn. — on *Rumex acetosa*, Dolgie Male, *Bp*, 0, Kluki, *C-P*, 0, IX 1997, VIII 1998.
- Puccinia aegopodii* (Schum.) Röhl. — on *Aegopodium podagraria*, NE Gardno, *B-Qr*, + +, Czolpino, *M-Sa*, + +, Gać, *F-G*, + +, VIII 1996, VII–VIII 1998.
- Puccinia angelicae* (Schum.) Fuck. — on *Angelica sylvestris*, Dolgie Duże, *Rn-A*, +, IX 1998.
- Puccinia arenariae* (Schum.) Wint. — on *Cerastium sylvaticum*, Czolpino, *M-Sa*, + + +, Kluki, *C-P*, +, IX 1998; on *Melandrium album*, Dolgie Male, *Bp*, + +, IX 1998; on *Stellaria media*, S Gardno, *Pa*, + + +, Dolgie Male, *Bp*, + +, VIII–IX 1996, IX 1998.
- Puccinia behenii* Oth — on *Melandrium album*, Dolgie Male, *Bp*, 0, IX 1998.
- Puccinia bromina* Eriks. — on *Bromus hordeaceus*, Dolgie Duże, *Rn-A*, +, VIII 1997.
- Puccinia calcitrapae* DC. — on *Arctium lappa*, Czolpino, *M-Sa*, + +, Kluki, *C-P*, +, IX 1996, VIII 1997, IX 1998; on *Centaurea jacea*, Gać, *F-G*, + +, IX 1998; on *C. scabiosa*, Kluki, *C-P*, + +, Gać, *F-G*, +, IX 1998; on *Cirsium oleraceum*, Gać, *F-G*, + + +, IX 1997, VIII–IX 1998.
- Puccinia caricina* DC. — on *Carex gracilis*, Kluki, *C-P*, +, VIII 1997; on *C. hirta*, Gać, *F-G*, + + +, VII, IX 1998; on *Ribes nigrum*, Dolgie Duże, *Rn-A*, +, VII 1998; on *Urtica dioica*, Dolgie Male, *Bp*, +, Dolgie Duże, *Rn-A*, +, Gać, *F-G*, + +, VII 1996, IX 1997, VII–IX 1998.
- Puccinia cerinthes-agropyryna* Tranzsch. — on *Myosotis arvensis*, Kluki, *C-P*, + +, VIII–IX 1998; on *M. caespitosa*, Kluki, *C-P*, 0, VIII 1997.

- Puccinia chaerophylli* Purt. – on *Anthriscus sylvestri*, Dolgie Male, Bp, + + +, VIII 1997, VII, IX 1998; on *Chaerophyllum hirsutum*, Czolpino, M-Sa, +, IX 1997; on *C. temulum*, Dolgie Male, Bp, + +, VII 1998; on *Myrrhis odorata*, Czolpino, M-Sa, 0, VIII 1998; on *Torilis japonica*, Dolgie Duże, Rn-A, +, VII, IX 1998.
- Puccinia cnici-oleracei* Pers. ex Desm. – on *Achillea millefolium*, Kluki, C-P, + +, IX 1997; on *A. ptarmica*, Czolpino, M-Sa, +, Kluki, C-P, +, Gać, F-G, +, VIII–IX 1998; on *Cirsium oleraceum*, Gać, F-G, +, IX 1997.
- Puccinia coronata* Corda – on *Agropyron repens*, S Gardno, Pa, +, Kluki, C-P, +, IX 1996, IX 1997; on *Agrostis capillaris*, NE Gardno, B-Qr, +, VII 1996; on *Alopecurus pratensis*, Kluki, C-P, +, Gać, F-G, +, VII 1996, VII 1997; on *Avena sativa*, Czolpino, M-Sa, +, Kluki, C-P, +, IX 1997; on *Calamagrostis epigejos*, NE Gardno, B-Qr, +, VIII 1996; on *Dactylis glomerata*, NE Gardno, B-Qr, + +, Dolgie Male, Bp, + +, VII–IX 1996, VIII 1997, VII 1998; on *Festuca pratensis*, Czolpino, M-Sa, +, VIII 1996, VIII 1997; on *Glyceria maxima*, Kluki, C-P, 0, VII 1998; on *Holcus lanatus*, Kluki, C-P, +, VII 1996; on *Lolium perenne*, Kluki, C-P, +, VIII 1997; on *Phalaris arundinacea*, Dolgie Duże, Rn-A, 0, VIII 1997; on *Phragmites australis*, Dolgie Duże, Rn-A, +, VIII–IX 1996.
- Puccinia cyani* Pass. – on *Centaurea cyanus*, Gać, F-G, + + +, VII–VIII 1998.
- Puccinia difformis* Kunze – on *Galium aparine*, NE Gardno, B-Qr, + +, Gać, F-G, 0, VII–VIII 1998.
- Puccinia dioicae* Magn. – on *Carex leporina*, Czolpino, M-Sa, +, Kluki, C-P, +, VII–VIII 1996; on *Carex* sp., Kluki, C-P, +, IX 1996; on *Cirsium oleraceum*, Gać, F-G, +, IX 1997.
- Puccinia fergussonii* Berk. et Br. – on *Viola palustris*, Dolgie Duże, Rn-A, +, VIII 1998.
- Puccinia glechomatis* DC. – on *Glechoma hederacea*, Kluki, C-P, + +, IX 1998.
- Puccinia graminis* Pers. – on *Agropyron repens*, S Gardno, Pa, + +, Kluki, C-P, + +, Gać, F-G, + +, VIII 1996, VIII–IX 1997, VII–IX 1998; on *Agrostis stolonifera*, Kluki, C-P, +, VIII 1998; on *A. capillaris*, NE Gardno, B-Qr, +, VIII 1996; on *Alopecurus pratensis*, Gać, F-G, +, VIII 1997; on *Anthoxanthum odoratum*, Dolgie Duże, Rn-A, +, VIII 1998; on *Arrhenatherum elatius*, Czolpino, M-Sa, +, Gać, F-G, 0, VIII 1997; on *Avena fatua*, Dolgie Male, Bp, + + +, VII–VIII 1997, VII 1998; on *Calamagrostis epigejos*, NE Gardno, B-Qr, +, VIII 1997, VIII 1998; on *Dactylis glomerata*, NE Gardno, B-Qr, + +, Dolgie Male, Bp, +, VII–IX 1997, VII–VIII 1998; on *Festuca heterophylla*, Czolpino, M-Sa, +, VII 1998; on *F. pratensis*, Kluki, C-P, +, VII 1996; on *F. rubra*, Kluki, C-P, +, VIII 1998; on *Holcus mollis*, NE Gardno, B-Qr, +, VIII 1998; on *Lolium perenne*, Kluki, C-P, + +, Gać, F-G, + +, VII–IX 1997, VII–VIII 1998; on *Phleum pratense*, Kluki, C-P, +, Gać, F-G, 0, VIII 1997, VIII–IX 1998.

- Puccinia hieracii* Mart. – on *Cichorium intybus*, Gać, F-G, +, IX 1998; on *Hieracium sabaudum*, NE Gardno, B-Qr, +, VIII 1998; on *H. laevigatum*, NE Gardno, B-Qr, ++, VIII 1996, IX 1998; on *Taraxacum officinale*, NE Gardno, B-Qr, ++, Dolgie Duże, Rn-A, ++, Czolpino, M-Sa, ++, Kluki, C-P, ++, Gać, F-G, +, VII–IX 1997, VII–IX 1998.
- Puccinia holcina* Erikss. – on *Holcus lanatus*, Kluki, C-P, 0, IX 1998.
- Puccinia hystereum* (Str.) Röhl. – on *Tragopogon pratensis*, Dolgie Duże, Rn-A, 0, VII 1998; on *T. orientalis*, Gać, F-G, +, VII 1998.
- Puccinia lapsanae* Fuck. – on *Lapsana communis*, Dolgie Małe, Bp, ++, Dolgie Duże, Rn-A, ++, Czolpino, M-Sa, +, Kluki, C-P, +, Gać, F-G, ++, VII–VIII 1996, VIII 1997, VII–IX 1998.
- Puccinia limosae* Magn. – on *Lysimachia vulgaris*, Czolpino, M-Sa, +, IX 1997.
- Puccinia littoralis* Rostr. – on *Sonchus arvensis*, Dolgie Małe, Bp, +, VII–VIII 1998.
- Puccinia magelhaenica* Peyr. – on *Arrhenatherum elatius*, Czolpino, M-Sa, 0, IX 1997.
- Puccinia magnusiana* Körn. – on *Phragmites australis*, S Gardno, Pa, +, Dolgie Duże, Rn-A, 0, VIII 1997, VIII 1998.
- Puccinia malvacearum* Bert. – on *Malva neglecta*, Kluki, C-P, ++, VII–IX 1998; on *M. sylvestris*, Gać, F-G, 0, IX 1998.
- Puccinia menthae* Pers. – on *Mentha arvensis*, Gać, F-G, ++, IX 1998; on *M. longifolia*, Dolgie Duże, Rn-A, 0, IX 1998; on *M. x citrata* subsp. *citrata*, Kluki, C-P, +, IX 1998.
- Puccinia molinae* Tul. – on *Molinia caerulea*, Dolgie Małe, Bp, 0, VIII 1998.
- Puccinia Opizii* Bub. – on *Carex spicata*, Czolpino, M-Sa, 0, VIII 1997.
- Puccinia phragmitis* (Schum.) Körn. – on *Phragmites australis*, S Gardno, Pa, 0, Dolgie Duże, Rn-A, +, VIII 1997, VII 1998; on *Rumex hydrolapathum*, Dolgie Duże, Rn-A, +, IX 1998; on *R. crispus*, Czolpino, M-Sa, ++, IX 1998; on *R. obtusifolius*, Dolgie Małe, Bp, +, IX 1998.
- Puccinia poarum* Niels. – on *Tussilago farfara*, Dolgie Duże, Rn-A, ++, VIII–IX 1996, VIII–IX 1997, VII 1998.
- Puccinia polygoni* Alb. et Schw. – on *Fallopia convolvulus*, Czolpino, M-Sa, +, IX 1998; on *F. dumetorum*, Kluki, C-P, 0, IX 1998.
- Puccinia polygoni-amphibii* Pers. – on *Polygonum amphibium*, Kluki, C-P, +, IX 1997, IX 1998; on *Polygonum lapathifolium* subsp. *pallidum*, Kluki, C-P, +, VIII 1997.
- Puccinia pulverulenta* Grev. – on *Epilobium adnatum*, Kluki, C-P, 0, IX 1997; on *E. roseum*, Czolpino, M-Sa, +, IX 1998.
- Puccinia punctata* Link. – on *Galium rivale*, Dolgie Duże, Rn-A, +, VII 1998; on *G. uliginosum*, Gać, F-G, +, IX 1998.
- Puccinia punctiformis* (Str.) Rvhl. – on *Cirsium arvense*, NE Gardno, B-Qr, ++, Dolgie Duże, Rn-A, ++, VIII 1996, VII, IX 1998.

- Puccinia recondita* Rob. ex Desm. — on *Anchusa arvensis*, Kluki, C-P, +, Gać, F-G, +, VIII 1998; on *Anchusa officinalis*, Kluki, C-P, +, VIII–IX 1998.
- Puccinia sessilis* Schneid. — on *Maianthemum bifolium*, NE Gardno, B-Qr, 0, IX 1997; on *Polygonatum multiflorum*, NE Gardno, B-Qr, 0, IX 1997.
- Puccinia sii-falcaeriae* Schroet. — on *Falcaria vulgaris*, Kluki, C-P, ++, Gać, F-G, +, VIII 1998.
- Puccinia tanacetii* DC. — on *Artemisia absinthium*, Dolgje Male, Bp, ++, VIII 1998; on *A. vulgaris*, Czolpino, M-Sa, ++, Kluki, C-P, ++, Gać, F-G, ++, VIII 1996, IX 1997, VII–IX 1998; on *Tanacetum vulgare*, Gać, F-G, +, VIII 1997, IX 1998.
- Puccinia variabilis* Grev. — on *Taraxacum officinale*, NE Gardno, B-Qr, +, Czolpino, M-Sa, +, Kluki, C-P, +, VIII 1996, VII–VIII 1997, IX 1998.
- Puccinia violae* DC. — on *Viola canina*, Kluki, C-P, +, Gać, F-G, 0, IX 1998; on *Viola tricolor*, Dolgje Male, Bp, 0, IX 1998.
- Pucciniastrum agrimoniae* (Diet.) Tranzsch. — on *Agrimonia eupatoria*, NE Gardno, B-Qr, 0, VII 1998.
- Pucciniastrum epilobii* Otth — on *Chamaenerion angustifolium*, Kluki, C-P, +, VIII 1996; on *Epilobium roseum*, Czolpino, M-Sa, 0, IX 1998.
- Pucciniastrum vaccinii* (Wint.) Jorst. — on *Vaccinium myrtillus*, NE Gardno, B-Qr, 0, Dolgje Male, Bp, +, Czolpino, M-Sa, 0, IX 1998.
- Triphragmium filipendulae* Pass. — on *Filipendula vulgaris*, NE Gardno, B-Qr, 0, VIII 1996.
- Uromyces baeunlerianus* Bub. — on *Melilotus alba*, Kluki, C-P, 0, IX 1997, IX 1998.
- Uromyces dactylidis* Otth — on *Dactylis glomerata*, NE Gardno, B-Qr, +, Dolgje Male, Bp, +, VII 1997, VIII 1998.
- Uromyces euphorbiae-corniculati* Jordi — on *Lotus uliginosus*, NE Gardno, B-Qr, +, Kluki, C-P, +, VIII 1996, IX 1997. On *L. uliginosus* near Wrocław, Olsztyn, and in the Kampinoska Forest (M a j e w s k i 1977).
- Uromyces fallens* (Arth.) Kern ex Barthol. — on *Trifolium pratense*, NE Gardno, B-Qr, ++, Kluki, C-P, ++, Gać, F-G, +, VIII 1996, VIII 1997, VIII–IX 1998.
- Uromyces ficariae* (Schum.) Fuck. — on *Ficaria verna*, Czolpino, M-Sa, 0, VIII 1998.
- Uromyces geranii* (DC.) Fr. — on *Geranium palustre*, Dolgje Duże, Rn-A, +, Gać, F-G, 0, VII–IX 1998; on *G. pyrenaicum*, Dolgje Duże, Rn-A, +, VII 1998.
- Uromyces inaequaltus* Lasch — on *Silene vulgaris*, Dolgje Duże, Rn-A, +, IX 1997.
- Uromyces lupinicolus* Bub. — on *Lupinus luteus*, Gać, F-G, ++, VIII 1998.
- Uromyces polygoni-aviculariae* (Pers.) Karst. — on *Polygonum aviculare*, Kluki, C-P, ++++, VIII 1996, VII 1998.
- Uromyces rumicis* (Schum.) Wint. — on *Rumex hydrolapathum*, S Gardno, Pa, +, VII 1998; on *Rumex sanguineus*, Dolgje Duże, Rn-A, +, IX 1998.

- Uromyces striatus* Schroet. — on *Trifolium arvense*, Czolpino, *M-Sa*, 0, VIII 1998.
- Uromyces trifolii-repentis* Liro — on *Trifolium repens*, Kluki, *C-P*, +, Gać, *F-G*, ++, VII, IX 1996, VIII 1997, VII, IX 1998.
- Uromyces viciae-fabae* (Pers.) Schroet. — on *Lathyrus montanus*, Gać, *F-G*, +, IX 1998; on *Vicia cracca*, Kluki, *C-P*, ++, Gać, *F-G*, +, VIII 1996, VIII 1998; on *V. faba*, Kluki, *C-P*, 0, VIII 1996; on *V. hirsuta*, Kluki, *C-P*, +, VIII–IX 1998; on *V. sativa*, Kluki, *C-P*, 0, IX 1998; on *V. tetrasperma*, Kluki, *C-P*, +, IX 1998.

#### *Incertae sedis*

- Aecidium ranunculacearum* DC. — on *Ranunculus repens*, NE Gardno, *B-Qr*, ++, Kluki, *C-P*, +, VII 1998.

#### USTILAGINALES

- Microbotryum lychnidis-dioicae* (de Candolle ex Liro) Deml. et Oberwinkler — on *Melandrium album*, Dolgie Male, *Bp*, +, VIII–IX 1998.
- Urocystis agropyri* (Preuss) Fisch. v. Waldh. — on *Agropyron repens*, S Gardno, *Pa*, ++, Kluki, *C-P*, ++, Gać, *F-G*, +++, VII 1997, VII 1998.
- Urocystis anemones* (Pers.) Wint. — on *Anemone nemorosa*, NE Gardno, *B-Qr*, ++, IX 1997.
- Urocystis dactylidina* (Lavrov) M. Chochr. — on *Dactylis glomerata*, NE Gardno, *B-Qr*, 0, VII 1997.
- Urocystis ranunculi* (Lib.) Moesz. — on *Ranunculus repens*, NE Gardno, *B-Qr*, +, VIII 1998.
- Urocystis trientalis* (Berk. et Br.) Lindeb. — on *Trientalis europaea*, Dolgie Male, *Bp*, ++, VII 1996.
- Urocystis violae* (Sow.) Fisch. v. Waldh. — on *Viola palustris*, Dolgie Duże, *Rn-A*, ++, VIII 1998.
- Ustilago avenae* (Pers.) Rostr. — on *Avena fatua*, Dolgie Male, *Bp*, 0, VIII 1997.
- Ustilago calamagrostidis* (Fuck.) Clint. — on *Calamagrostis epigejos*, NE Gardno, *B-Qr*, 0, VIII 1997.
- Ustilago cichorii* H. Syd. — on *Cichorium intybus*, Gać, *F-G*, +, IX 1998. First record for Poland. Found on Rugia, in Kazachstan, and Tadżykistan (K o c h m a n and M a j e w s k i 1973).
- Ustilago grandis* Fr. — on *Phragmites australis*, Dolgie Duże, *Rn-A*, 0, VIII 1996.
- Ustilago hypodytes* (Schlecht.) Fr. — on *Agropyron repens*, S Gardno, *Pa*, +, Gać, *F-G*, +, VII 1998.
- Ustilago striiformis* (Westend.) Nicssl — on *Alopecurus pratensis*, Kluki, *C-P*, +, Gać, *F-G*, 0, VIII 1996, VII–VIII 1997; on *Festuca pratensis*, Gać, *F-G*, +, IX 1996; on *Holcus lanatus*, Kluki, *C-P*, 0, IX 1998; on *Lolium perenne*, Kluki, *C-P*, +, VIII 1997; on *Phalaris arundinacea*, Dolgie Duże, *Rn-A*, 0, VIII 1997; on *Phleum pratense*, Kluki, *C-P*, +, VIII 1997.

## MITOSPORIC FUNGI

- Ampelomyces quisqualis* Ces. — on *Erysiphe aquilegiae* var. *ranunculi* (on *Ranunculus repens*), Kluki, C-P, 0, IX 1998; on *E. artemisiae* (on *Artemisia vulgaris*), Gać, F-G, +, VIII 1996, VIII 1998; on *E. buhrii* (on *Melandrium album*), Dolgie Małe, Bp, 0, IX 1998; on *E. cichoracearum* var. *cichoracearum* (on *Cichorium intybus*), Gać, F-G, 0, IX 1998; on *E. cichoracearum* var. *cichoracearum* (on *Tanacetum vulgare*), Gać, F-G, ++, IX 1997, VII–VIII 1998; on *E. cichoracearum* var. *cichoracearum* (on *Tragopogon pratensis*, Dolgie Duże, Rn-A, 0, IX 1998; on *E. convolvuli* var. *calystegiae* (on *Calystegia sepium*), Kluki, C-P, 0, IX 1998; on *E. depressa* (on *Arctium lappa*), Czolpino, M-Sa, 0, IX 1996, on *E. mayorii* var. *mayorii* (on *Cirsium arvense*), Dolgie Duże, Rn-A, 0, VII 1998; on *E. pisi* var. *pisi* (on *Lathyrus montanus*), Gać, F-G, 0, IX 1998; on *E. pisi* var. *pisi* (on *Melilotus alba*), Kluki, C-P, 0, IX 1998; on *Sphaerotheca epilobii* (on *Epilobium roseum*), Czolpino, M-Sa, +, IX 1998; on *S. fusca* (on *Cirsium oleraceum*), Gać, F-G, 0, IX 1998; on *S. macularis* (on *Humulus lupulus*), Kluki, C-P, 0, VIII 1998; on *S. pannosa* (on *Rosa canina*), Czolpino, M-Sa, 0, VII 1998.
- Ascochyta doronici* Allesch. — on *Taraxacum officinale*, NE Gardno, B-Qr, +, Dolgie Duże, Rn-A, +, Kluki, C-P, +, VIII 1996, VII–VIII 1997. On *T. officinale* near Radom and in the Tatra Mts. (S a ł a t a, M u ł e n k o, W o ł c z a ń s k a 1994).
- Ascochyta euphrasiae* Oud. — on *Linaria vulgaris*, Dolgie Małe, Bp, 0, IX 1998. First record for Poland. According to B r a n d e r b u r g e r (1985), it occurs in the Middle Europe.
- Ascochyta graminicola* Sacc. — on *Agropyron repens*, S Gardno, Pa, +, Gać, F-G, +, VII–VIII 1997; on *Bromus hordeaceus*, Dolgie Duże, Rn-A, 0, VII 1997; on *B. inermis*, Kluki, C-P, +, Gać, F-G, +, VIII 1997; on *B. sterilis*, Kluki, C-P, 0, VII 1998; on *Dactylis glomerata*, Dolgie Małe, Bp, 0, VIII 1997; on *Festuca pratensis*, Gać, F-G, 0, IX 1996; on *Lolium perenne*, Kluki, C-P, 0, IX 1997.
- Ascochyta plantaginis* Sacc. — on *Plantago major*, Kluki, C-P, 0, IX 1997. On *P. major* in the Pieniny Mts. (K u é m i e r z 1975, 1976a, b).
- Ascochyta viciae* Lib. — on *Vicia cracca*, Kluki, C-P, 0, Gać, F-G, +, VII–VIII 1996, VII–VIII 1997; on *V. sativa*, Czolpino, M-Sa, 0, VIII 1996. On *V. sativa* near Mszana Dolna (K u é m i e r z 1969) and in the Lake District (Mulencko 1988). No literature data exists on the occurrence of *A. viciae* on *V. cracca* growing in Poland.
- Cercospora chaerophylli* Höhn. — on *Chaerophyllum hirsutum*, Czolpino, M-Sa, 0, IX 1997. On *C. hirsutum* in the Tatra National Park (S a ł a t a et al. 1984).
- Cercospora euphrasiae* Ondrej — on *Odontites serotina*, Czolpino, M-Sa, 0, IX 1998. First record for Poland. According to B r a n d e r b u r g e r (1985), this fungus occurs in the Middle Europe.

- Cercospora ferruginea* Fuck. — on *Artemisia vulgaris*, Czolpino, *M-Sa*, +, Gać, *F-G*, +, VIII 1996, IX 1997. On *A. vulgaris* near Szczecin (M a d e j 1963), in the Łęczyńsko-Włodawskie Lake District (M u ł e n k o 1988), and in the Ojców National Park (K u ć m i e r z 1971, 1973). A frequently occurring fungus in Europe (E l l i s 1976).
- Cercospora tragopogonis* Ellis et Everh. — on *Tragopogon pratensis*, Dolgie Duże, *Rn-A*, +, IX 1997. First record for Poland, but listed among the fungi occurring in the Middle Europe (B r a n d e r b u r g e r 1985).
- Cercosporiella cana* Sacc. — on *Conyza canadensis*, Kluki, *C-P*, 0, IX 1998. Found earlier in the Ojców National Park (K u ć m i e r z 1971, 1973) and the Łęczyńsko-Włodawskie Lake District (M u ł e n k o 1988).
- Cercosporidium galli* (Ellis et Holw.) Deighton — on *Galium saxatile*, Kluki, *C-P*, 0, VIII 1998. In Poland, found only associated with *G. uliginosum* (M u ł e n k o 1988).
- Cladosporium cladosporioides* (Fres.) de Vries — on *Aegopodium podagraria*, NE Gardno, *B-Qr*, +, VII 1998; on *Artemisia vulgaris*, Kluki, *C-P*, 0, Gać, *F-G*, +, IX 1997, VII 1998; on *A. absinthium*, Dolgie Małe, *Bp*, 0, VIII–IX 1997; on *Avena fatua*, Gać, *F-G*, 0, VII 1998; on *A. sativa*, Gać, *F-G*, 0, VIII 1998; on *Betula pendula*, NE Gardno, *B-Qr*, 0, VII 1996; on *Bromus hordeaceus*, Dolgie Duże, *Rn-A*, 0, VII 1996; on *B. sterilis*, Kluki, *C-P*, 0, VII 1998; on *Calamagrostis epigejos*, NE Gardno, *B-Qr*, 0, VIII 1998; on *Carex arenaria*, Kluki, *C-P*, 0, VIII 1996; on *Centaurea cyanus*, Gać, *F-G*, +, VII 1998; on *Deschampsia flexuosa*, Dolgie Małe, *Bp*, 0, VII 1998; on *Elymus arenarius*, Czolpino, *M-Sa*, 0, VIII 1998; on *Empetrum nigrum*, NE Gardno, *B-Qr*, 0, IX 1998; on *Epilobium roseum*, Czolpino, *M-Sa*, 0, VIII 1998; on *Festuca heterophylla*, Kluki, *C-P*, 0, VIII 1998; on *F. rubra*, Gać, *F-G*, 0, VIII 1998; on *Filipendula vulgaris*, NE Gardno, *B-Qr*, 0, VIII 1996; on *Galium aparine*, NE Gardno, *B-Qr*, +, Gać, *F-G*, ++, VII 1998; on *Geum urbanum*, Czolpino, *M-Sa*, 0, IX 1998; on *Hieracium sabaudum*, Dolgie Małe, *Bp*, 0, IX 1998; on *Holcus lanatus*, Kluki, *C-P*, 0, VII 1996; on *Lamium maculatum*, NE Gardno, *B-Qr*, 0, VII 1998; on *Lolium multiflorum*, Czolpino, *M-Sa*, 0, IX 1996; on *L. perenne*, Gać, *F-G*, +, VII–VIII 1998; on *Lysimachia vulgaris*, Dolgie Duże, *Rn-A*, 0, IX 1998; on *Molinia caerulea*, Dolgie Małe, *Bp*, 0, VIII 1998; on *Phragmites australis*, Dolgie Duże, *Rn-A*, 0, VIII 1998; on *Polygonatum multiflorum*, NE Gardno, *B-Qr*, +, VIII 1998; on *Ficaria verna*, Czolpino, *M-Sa*, 0, VIII 1998; on *Senecio viscosus*, NE Gardno, *B-Qr*, 0, IX 1998; on *Tragopogon pratensis*, Dolgie Duże, *Rn-A*, 0, IX 1998; on *Trifolium arvense*, Czolpino, *M-Sa*, 0, VIII 1998; on *Veronica montana*, Dolgie Duże, *Rn-A*, 0, IX 1998; on *Viola canina*, Dolgie Duże, *Rn-A*, 0, IX 1998; on *V. tricolor*, Dolgie Małe, *Bp*, 0, VIII 1998.
- Colletotrichum dematium* (Pers.) Grove — on *Convallaria majalis*, Dolgie Małe, *Bp*, ++, VII 1996, VIII 1997, VIII 1998; on *Heracleum sphondylium*, Kluki, *C-P*, 0, VII 1997; on *Maianthemum bifolium*, Dolgie Duże, *Rn-A*, +, VIII 1998; on *Melandrium album*, Dolgie Małe, *Bp*, 0, VIII 1997; on *Polygona-*



- tum multiflorum*, NE Gardno, *B-Qr.* ++, IX 1997, VIII 1998; on *Rumex conglomeratus*, Kluki, *C-P.* 0, VII 1998; on *Tilia cordata*, Gać, *F-G.* 0, VIII 1996.
- Colletotrichum trifolii* Bain et Essary – on *Melilotus alba*, Kluki, *C-P.* 0, IX 1997; on *Trifolium arvense*, Czolpino, *M-Sa.* +, IX 1998; on *T. repens*, Kluki, *C-P.* +, VII 1996.
- Didymaria linariae* Pass. – on *Linaria vulgaris*, Dolgie Male, *Bp.* +, VII–VIII 1996, VII, IX 1998. On *L. vulgaris* in the Łęczyńsko-Włodawskie Lake District (Mulencko 1988).
- Diplodina medicaginis* Oud. – on *Medicago sativa*, Gać, *F-G.* +, IX 1996. Recorded in the Middle Europe (B r a n d e r b u r g e r 1985). There is no literature report of the presence of this fungus on *M. sativa* growing in Poland.
- Epicoccum nigrum* Link – on *Rhinantus serotinus*, Kluki, *C-P.* 0, VIII 1998; on *Filipendula vulgaris*, NE Gardno, *B-Qr.* 0, VIII 1996; on *Hieracium laevigatum*, NE Gardno, *B-Qr.* 0, VIII 1996; on *Sambucus nigra*, Kluki, *C-P.* 0, VII 1996; on *Trifolium pratense*, Gać, *F-G.* 0, VIII 1996.
- Fusarium oxysporum* Schlecht. – on *Lupinus luteus*, Czolpino, *M-Sa.* 0, VIII 1996; on *Sonchus arvensis*, Dolgie Male, *Bp.* 0, VIII 1998.
- Fusarium* spp. – on *Aegopodium podagraria*, NE Gardno, *B-Qr.* 0, VIII 1996; on *Anthriscus sylvestris*, Dolgie Male, *Bp.* 0, VII 1998; on *Berteroa incana*, Kluki, *C-P.* 0, VIII 1997; on *Epilobium roseum*, Czolpino, *M-Sa.* 0, IX 1998; on *Conyza canadensis*, Kluki, *C-P.* 0, IX 1998; on *Hypericum perforatum*, Dolgie Duże, *Rn-A.* 0, VII 1996; on *Lathyrus montanus*, Gać, *F-G.* 0, IX 1998; on *Linaria vulgaris*, Dolgie Male, *Bp.* 0, VIII 1998; on *Lotus corniculatus*, Czolpino, *M-Sa.* 0, IX 1998; on *Polygonum persicaria*, Kluki, *C-P.* 0, VIII 1998; on *Ficaria verna*, Czolpino, *M-Sa.* 0, VIII 1998; on *Rubus idaeus*, Dolgie Male, *Bp.* 0, VII 1998; on *Sambucus nigra*, Kluki, *C-P.* 0, IX 1998; on *S. racemosa*, Kluki, *C-P.* 0, IX 1996; on *Senecio jacobaea*, Dolgie Duże, *Rn-A.* 0, VIII 1998; on *Symphytum officinale*, Kluki, *C-P.* 0, VIII 1998; on *Torilis japonica*, Dolgie Duże, *Rn-A.* 0, VII 1998; on *Urtica dioica*, Czolpino, *M-Sa.* 0, IX 1998; on *Vicia faba*, Kluki, *C-P.* 0, VIII 1996.
- Heterosporium avenae* Oud. – on *Avena sativa*, Gać, *F-G.* 0, VII 1998; on *Avena sativa*, Kluki, *C-P.* +, Gać, *F-G.* +, VIII 1998; on *Calamagrostis epigejos*, NE Gardno, *B-Qr.* +, Kluki, *C-P.* 0, VIII 1998; on *Elymus arenarius*, Czolpino, *M-Sa.* 0, VIII 1998; on *Molinia caerulea*, Dolgie Male, *Bp.* +, VIII 1998.
- Heterosporium phlei* Gregory – on *Phleum pratense*, Kluki, *C-P.* 0, Gać, *F-G.* +, VII–VIII 1998. *Heterosporium phlei* [= *Cladosporium phlei* (C. T. Gregory) de Vries] is a parasite of plants of only the genus *Phleum* (Arx 1981). Observed in the whole Europe, New Zealand, and USA (B r a n d e r b u r g e r 1985; Ellis 1976).
- Kabatiella microcticta* Bubak – on *Polygonatum multiflorum*, NE Gardno, *B-Qr.* 0, IX 1997. On *P. multiflorum* in the Białowieża National Park

- (M u l e n k o 1994). A parasite of plants of the genera *Convallaria* and *Polygonatum*, and those of the family *Liliaceae* (Arx 1987).
- Mastigosporium album* Riess – on *Alopecurus pratensis*, Kluki, C-P, +, Gać, F-G, +, VIII 1996, VII 1997.
- Mastigosporium rubricosum* (Dearn. et Barth.) Nannf. – on *Agropyron repens*, S Gardno, Pa, 0, VII 1997; on *Agrostis capillaris*, NE Gardno, B-Qr, 0, VII 1996; on *Arrhenatherum elatius*, Czolpino, M-Sa, +, VII–VIII 1998; on *Calamagrostis canescens*, Dolgie Duże, Rn-A, +, VIII 1996; on *Dactylis glomerata*, NE Gardno, B-Qr, +, Dolgie Małe, Bp, 0, VII 1997, VII 1998; on *Festuca ovina*, Kluki, C-P, 0, VII 1996; on *F. pratensis*, Gać, F-G, 0, VII 1996; on *F. rubra*, Kluki, C-P, 0, VII 1997; on *Lolium multiflorum*, Czolpino, M-Sa, 0, VIII 1998; on *Phleum pratense*, Dolgie Małe, Bp, 0, VIII 1998; on *Poa trivialis*, Dolgie Małe, Bp, 0, Kluki, C-P, 0, VII 1997.
- Ovularia decipiens* Sacc. – on *Ranunculus repens*, Kluki, C-P, +, VIII–IX 1996, IX 1998.
- Ovularia sphaeroidea* Sacc. – on *Lotus corniculatus*, Czolpino, M-Sa, 0, IX 1998; on *L. uliginosus*, Kluki, C-P, +, IX 1998; on *Vicia sativa*, Czolpino, M-Sa, 0, VIII 1996; on *V. tetrasperma*, Kluki, C-P, 0, IX 1998.
- Pestalozziella subsessilis* Sacc. et Ellis – on *Geranium palustre*, Dolgie Duże, Rn-A, 0, VIII 1998.
- Phoma complanata* (Tode : Fr.) Desmaz. – on *Heracleum sphondylium*, Kluki, C-P, +, VII 1997.
- Phyllosticta aucupariae* Thm. – on *Sorbus aucuparia*, NE Gardno, B-Qr, +, VIII–IX 1998.
- Phyllosticta hieracii* Allesch. – on *Hieracium laevigatum*, NE Gardno, B-Qr, 0, IX 1996. Observed previously only on *H. umbellatum* (M u l e n k o 1988); no literature data is of the occurrence of *P. hieracii* on *H. laevigatum* growing in Poland.
- Phyllosticta lappae* Sacc. – on *Arctium lappa*, Czolpino, M-Sa, 0, IX 1996. On *A. lappa* on meadows between Nakło and Ujście (M i c h a l s k i 1982).
- Phyllosticta leptidae* Fr. – on *Vaccinium vitis-idaea*, Dolgie Małe, Bp, 0, VII 1996. On *V. vitis-idaea* in the Łęczyńsko-Włodawskie Lake District (M u l e n k o 1988).
- Phyllosticta plantaginis* Sacc. – on *Plantago lanceolata*, Gać, F-G, 0, IX 1996.
- Phyllosticta symphyti* Cejp – on *Symphytum officinale*, Kluki, C-P, 0, VIII 1998. First record for Poland. Cejp (1966) found *P. symphyti* on *S. officinale* in the Czech Republic.
- Phyllosticta typhina* Sacc. – on *Typha latifolia*, S Gardno, Pa, 0, VII 1998. On *T. latifolia* in the Mazurian Lake District (D u r s k a 1974) and on meadows between Nakło and Ujście (M i c h a l s k i 1982).
- Phyllosticta violae* Desmaz. – on *Viola arvensis*, Dolgie Małe, Bp, 0, VII 1997, VIII 1998; on *Viola tricolor*, Dolgie Małe, Bp, 0, VIII 1998.
- Pleiochaeta setosa* (Kirchn.) Hugh. – on *Lembotropis nigricans*, Dolgie Małe, Bp, 0, VII 1997.

- Pseudocercospora capsellae* (Ellis et Everh.) Deighton – on *Capsella bursa-pastoris*, Gać, F-G, 0, VIII 1998. The fungus was not earlier found on *C. bursa-pastoris* in Poland. A frequent parasite of rape causing a white spot of leaves (Mrugas and Korbas 1998).
- Ramularia alismatis* Fautrey – on *Alisma plantago-aquatica*, S Gardno, Pa, ++, VIII–IX 1998.
- Ramularia anthrisci* v. Hvhn. – on *Anthriscus sylvestris*, Dolgie Male, Bp, 0, VIII 1997. On *A. sylvestris* in the Pieniny Mts. (K u ć m i e r z 1975, 1976b), the Ojców National Park (K u ć m i e r z 1971, 1973), and on meadows between Nakło and Ujście (M i c h a l s k i 1982).
- Ramularia centaureae* Lindr. – on *Centaurea scabiosa*, Kluki, C-P, +, IX 1998. First record for Poland. Found earlier in the Middle Europe (B r a n d e r b u r g e r 1985).
- Ramularia cirsii* Allesch. – on *Cirsium arvense*, NE Gardno, B-Qr, +, Dolgie Duże, Rn-A, ++, VIII–IX 1996. On *C. arvense* in the Bug river valley (D a n i l k i e w i c z 1987).
- Ramularia decipiens* Ell. et Ev. – on *Rumex hydrolapathum*, S Gardno, Pa, +, VIII 1996, VIII 1997, VII 1998. On *R. hydrolapathum* in the Chmielinno reserve (D a n i l k i e w i c z 1982) and the Bug river valley (D a n i l k i e w i c z 1987).
- Ramularia didyma* Unger – on *Ranunculus bulbosus*, Dolgie Male, Bp, +, VII 1997.
- Ramularia dubia* Riess – on *Atriplex patula*, Gać, F-G, 0, VIII 1998; on *Chenopodium album*, Kluki, C-P, +, Gać, F-G, +, VIII–IX 1997.
- Ramularia gei* (Eliass.) Lindr. – on *Geum urbanum*, Czolpino, M-Sa, +, VII 1996, VII 1997.
- Ramularia geranii* (Westend.) Fuck. – on *Geranium dissectum*, Dolgie Male, Bp, +, VIII 1997, VIII–IX 1998; on *G. molle*, NE Gardno, B-Qr, 0, IX 1997; on *G. pusillum*, Gać, F-G, 0, VII 1997; on *G. robertianum*, Gać, F-G, 0, VII 1997. GF: On *G. pusillum* in the Chmielinne reserve (D a n i l k i e w i c z 1982) and the Bug river valley (D a n i l k i e w i c z 1987). No report of the occurrence of this fungus on *G. dissectum*, *G. molle*, and *G. robertianum* growing in Poland existed to date.
- Ramularia heraclei* (Oudem.) Sacc. – on *Heracleum sphondylium*, Kluki, C-P, +, Gać, F-G, 0, VII 1997, VII 1998.
- Ramularia hieracii* (Baum.) Jaap. – on *Hieracium laevigatum*, NE Gardno, B-Qr, +, VIII–IX 1996; on *H. sabaudum*, Bp, +, IX 1998.
- Ramularia knautiae* Massal. – on *Knautia arvensis*, Dolgie Duże, Rn-A, +, Czolpino, M-Sa, +, VII 1996, VIII–IX 1997.
- Ramularia lactea* (Desmaz.) Sacc. – on *Viola arvensis*, Dolgie Male, Bp, +, VII 1997, VIII–IX 1998; on *V. palustris*, Kluki, C-P, 0, IX 1997; on *V. tricolor*, Dolgie Male, Bp, +, VIII 1998. On *V. tricolor* near Bydgoszcz (M i c h a l s k i 1965). There is lack of literature reports of the presence of this fungus on *V. arvensis* and *V. palustris* growing in Poland.

- Ramularia lamii* Fuck. — on *Galeopsis tetrahit*, Dolgie Duże, *Rn-A*, +, VIII 1996, IX 1997.
- Ramularia lapsanae* (Desm.) Sacc. — on *Lapsana communis*, Dolgie Małe, *Bp*, 0, VII 1996.
- Ramularia macrospora* Fresen. — on *Campanula rapunculoides*, Czolpino, *M-Sa*, +, VII 1998. On *C. rapunculoides* near Klodzko (Starmachowa and Kućmierz 1967), in the Pieniny Mts. (Kućmierz 1976b), and on meadows between Nakło and Ujście (Michalski 1982).
- Ramularia montana* Speg. — on *Epilobium parviflorum*, Dolgie Małe, *Bp*, 0, IX 1997; on *E. roseum*, Czolpino, *M-Sa*, 0, IX 1998. Observed on *E. roseum* in the Ojców National Park (Kućmierz 1971, 1973) and the Gorce (Kućmierz 1969); no data are on the occurrence of *R. montana* on *E. parviflorum* growing in Poland.
- Ramularia plantaginis* Ell. et Martin — on *Plantago lanceolata*, Kluki, *C-P*, +, IX 1998; on *P. major*, Kluki, *C-P*, +, Gać, *F-G*, ++, VII, IX 1996, VII, IX 1997.
- Ramularia pratensis* Sacc. — on *Polygonum hydropiper*, Gać, *F-G*, +, VIII 1996; on *Rumex acetosa*, Dolgie Małe, *Bp*, +, Kluki, *C-P*, ++, VII–IX 1996, VII–IX 1997, VIII 1998; on *R. acetosella*, Dolgie Małe, *Bp*, + + +, VII, IX 1996, VII 1997, IX 1998.
- Ramularia pusilla* Unger — on *Agropyron repens*, Gać, *F-G*, +, VIII 1997, IX 1998; on *Dactylis glomerata*, NE Gardno, *B-Qr*, +, Dolgie Małe, *Bp*, + +, VII 1996, VII–VIII 1997, VIII 1998; on *Festuca rubra*, Kluki, *C-P*, +, IX 1998; on *Lolium perenne*, Kluki, *C-P*, 0, VIII 1998.
- Ramularia rubella* (Bonord.) Nannf. — on *Rumex conglomeratus*, Dolgie Duże, *Rn-A*, +, Kluki, *C-P*, +, VII 1996, VII–VIII 1997, VII 1998; on *R. crispus*, Czolpino, *M-Sa*, + +, VIII 1996, IX 1998; on *R. obtusifolius*, Gać, *F-G*, + + +, VIII–IX 1996, VII–IX 1997.
- Ramularia sambucina* Sacc. — on *Sambucus nigra*, Kluki, *C-P*, +, VII 1996, IX 1998.
- Ramularia tanacetii* Lind — on *Tanacetum vulgare*, Gać, *F-G*, 0, IX 1998. On *T. vulgare* in the Łęczyńsko-Włodawskie Lake District (Muleńko 1988).
- Ramularia taraxaci* Karst. — on *Hieracium laevigatum*, NE Gardno, *B-Qr*, + +, VIII–IX 1996, VIII 1998; on *Taraxacum officinale*, NE Gardno, *B-Qr*, +, Dolgie Duże, *Rn-A*, + +, Kluki, *C-P*, +, VII–IX 1996, VII–VIII 1997, VII 1998.
- Ramularia ulmariae* Cooke — on *Filipendula vulgaris*, NE Gardno, *B-Qr*, +, VIII 1996. On *F. vulgaris* in the Bug river valley (Danilkiewicz 1987), the Pieniny Mts. (Kućmierz 1975, 1976b), and the Małopolska Upland (Romaszewska-Sałata 1981).
- Ramularia veronicae* Fuck. — on *Veronica arvensis*, Kluki, *C-P*, 0, VIII 1997; on *V. chamaedrys*, NE Gardno, *B-Qr*, +, Czolpino, *M-Sa*, + +, VIII–IX 1996, IX 1997, VII 1998. On *V. chamaedrys* in the Bug river valley (Danilkiewicz 1987) and the Łęczyńsko-Włodawskie Lake District

- (M u ł e n k o 1988). First record of the occurrence of *R. veronicae* on *V. arvensis* growing in Poland.
- Scolecotrichum graminicola* Fuck. — on *Arrhenatherum elatius*, Czolpino, *M-Sa*, +, Gać, *F-G*, +, VIII 1997; on *Calamagrostis canescens*, Czolpino, *M-Sa*, 0, VII 1996; on *Dactylis glomerata*, NE Gardno, *B-Qr*, +, Dolgie Małe, *Bp*, +, VII–VIII 1997; on *Phleum pratense*, Kluki, *C-P*, 0, VIII 1997; on *Poa pratensis*, Gać, *F-G*, 0, VIII 1997.
- Septoria agrimoniae* Roum. — on *Agrimonia eupatoria*, NE Gardno, *B-Qr*, 0, VII 1998. On *A. eupatoria* near Krosno (S a ł a t a et al. 1994).
- Septoria betulina* Pass. — on *Betula pubescens*, Dolgie Małe, *Bp*, 0, VIII 1998. On *B. pubescens* in the Łęczyńsko-Włodawskie Lake District (M u ł e n k o 1988).
- Septoria calamagrostidis* (Lib.) Sacc. — on *Calamagrostis epigejos*, NE Gardno, *B-Qr*, +, Kluki, *C-P*, +, VIII 1997, VIII 1998. Found previously near Bydgoszcz (M i c h a ł s k i 1965).
- Septoria campanulae* (Lev.) Sacc. — on *Campanula rapunculoides*, Czolpino, *M-Sa*, 0, VII 1998. First record for Poland, although earlier observed in other regions of the Middle Europe (B r a n d e r b u r g e r 1985).
- Septoria cerastii* Rob. ex Desm. — on *Cerastium holosteoides*, Gać, *F-G*, +, IX 1998. On *C. holosteoides* in the Pieniny Mts. (K u ć m i e r z 1975, 1976b).
- Septoria convolvuli* Desmaz. — on *Convolvulus arvensis*, Czolpino, *M-Sa*, +, VIII 1997.
- Septoria crepidis* Vest. — on *Crepis paludosa*, Kluki, *C-P*, 0, IX 1997. First record of *S. crepidis* on *C. paludosa* growing in Poland. Found in other regions of the Middle Europe (B r a n d e r b u r g e r 1985).
- Septoria cruciatae* Rob. ex Desm. — on *Galium aparine*, NE Gardno, *B-Qr*, +, VII 1998; on *Galium saxatile* L., Kluki, *C-P*, 0, VIII 1998. On *G. aparine* in the Białowieża National Park (M u ł e n k o 1996). No literature data is on the presence of this fungus on *G. saxatile* growing in Poland.
- Septoria diedickei* Sacc. et Sacc. — on *Galeobdolon luteum*, Dolgie Duże, *Rn-A*, 0, VIII 1997. On *G. luteum* near Chelm and Dukla (S a ł a t a et al. 1994) and in the Białowieża National Park (M u ł e n k o 1996).
- Septoria endiviae* Thum. — on *Cichorium intybus*, Gać, *F-G*, +, IX 1998. On *C. intybus* near Klodzko (S t a r m a c h o w a and K u ć m i e r z 1967).
- Septoria epilobii* Westend. — on *Epilobium hirsutum*, Gać, *F-G*, +, VIII 1998; on *E. montanum*, Dolgie Małe, *Bp*, 0, VIII 1996; on *E. roseum*, Czolpino, *M-Sa*, 0, Kluki, *C-P*, +, VII, IX 1996, VIII 1998.
- Septoria galeopsidis* Westend. — on *Galeopsis tetrahit*, Dolgie Małe, *Bp*, +, VII–VIII 1996, VIII 1998.
- Septoria gei* Rob. et Desmaz. — on *Geum urbanum*, Czolpino, *M-Sa*, ++, VII 1996, VII–VIII 1997, VII 1998.
- Septoria geranii* Rob. et Desmaz. — on *Geranium dissectum*, Dolgie Małe, *Bp*, 0, VIII 1997; on *G. pusillum*, Gać, *F-G*, +, VII 1997; on *G. robertianum*, Gać, *F-G*, 0, VII 1997. GF: infrequent.

- Septoria graminum* Desmaz. — on *Agrostis stolonifera*, Kluki, C-P, 0, VIII 1998; on *Bromus hordeaceus*, Dolgie Małe, Bp, 0, IX 1996; on *Festuca heterophylla*, Dolgie Duże, Rn-A, 0, VIII 1998; on *F. pratensis*, Kluki, C-P, +, VII 1996; on *Lolium perenne*, Kluki, C-P, 0, IX 1997; on *Molinia caerulea*, Dolgie Małe, Bp, 0, VIII 1998; on *Phalaris arundinacea*, Dolgie Duże, Rn-A, 0, VIII 1998; on *Phleum pratense*, Gać, F-G, 0, VII 1996.
- Septoria heracleicola* Kab. et Bub. — on *Heracleum sphondylium*, Kluki, C-P, 0, VII 1997. On *H. sphondylium* on meadows between Nakło and Ujście (Michalski 1982), in the Tatra National Park (Mulencko et al. 1995), and near Krosno (Romaszewska-Sałata et al. 1997).
- Septoria hyperici* Desm. — on *Hypericum perforatum*, Dolgie Duże, Rn-A, +, Gać, F-G, +, VIII 1996, VIII 1998. On *H. perforatum* near Krynica and the Beskid Sądecki (Sarmachowa 1966), in the Łęczyńsko-Włodawskie Lake District (Mulencko 1988), and the Pieniny Mts. (Kućmierz 1976b). No literature report regards the occurrence of this fungus in northern regions of Poland.
- Septoria lapsanae* Bernaux — on *Lapsana communis*, Czołpino, M-Sa, +, Kluki, C-P, +, VIII 1996, IX 1998. Not found previously on *L. communis* in Poland.
- Septoria lysimachiae* (Lib.) West. — on *Lysimachia vulgaris*, Dolgie Duże, Rn-A, +, Czołpino, M-Sa, +, IX 1997, IX 1998.
- Septoria menthae* (v. Thum.) Oudem. — on *Mentha arvensis*, Gać, F-G, 0, IX 1998; on *Mentha x citrata* subsp. *citrata*, Kluki, C-P, 0, IX 1998.
- Septoria mougeotii* Sacc. et Roum. — on *Hieracium laevigatum*, NE Gardno, B-Qr, +, VIII–IX 1996.
- Septoria plantaginis* (Ces.) Sacc. — on *Plantago lanceolata*, Kluki, C-P, +, VII 1998; on *Plantago major*, Gać, F-G, ++, VIII 1997. On *P. lanceolata* in the Pieniny Mts. (Kućmierz 1975, 1976b) and the Bug river valley (Danilkiewicz 1987); on *P. major* in the Tatra National Park (Mulencko et al. 1995).
- Septoria polygonorum* Desmaz. — on *Polygonum hydropiper*, Gać, F-G, ++, VIII–IX 1996; on *Polygonum persicaria*, Czołpino, M-Sa, +, VIII–IX 1998.
- Septoria rumicis* Trail — on *Rumex obtusifolius*, Gać, F-G, 0, VII 1997.
- Septoria scabiosicola* Desm. — on *Knautia arvensis*, Czołpino, M-Sa, ++, VIII–IX 1997, IX 1998; on *Succisa pratensis*, Dolgie Duże, Rn-A, 0, VII 1996. On *K. arvensis* near Oksywie (Michalski 1967) and Bydgoszcz (Michalski 1965); on *S. pratensis* near Bydgoszcz (Michalski 1965) and in the Łęczyńsko-Włodawskie Lake District (Mulencko 1988).
- Septoria senecionis* Westend. — on *Senecio* sp., Dolgie Duże, Rn-A, ++, IX 1996.
- Septoria silenicola* Ellis et Martin — on *Melandrium album*, Dolgie Małe, Bp, 0, VIII 1998.

- Septoria sisymbrii* Ellis — on *Sisymbrium officinale*, Gać, F-G, 0, VII–VIII 1998. First record for Poland. Observed in the Middle Europe (Brandenburger 1985).
- Septoria stellariae* Rob. ex Desm. — on *Stellaria media*, S Gardno, Pa, +, Dolgie Male, Bp, ++, VIII–IX 1996, VIII–IX 1998; on *Stellaria palustris*, Kluki, C-P, 0, IX 1998. On *S. media* in the Bug river valley (Danilkiewicz 1987) and near Klodzko (Starmachowa and Kucmierz 1967). No literature data is of *S. stellariae* on *S. palustris* growing in Poland.
- Septoria tanacetii* Niessl — on *Tanacetum vulgare*, Gać, F-G, +, VIII–IX 1997, IX 1998. On *T. vulgare* in the Bug river valley (Danilkiewicz 1987).
- Septoria ulmariae* Oudem. — on *Filipendula vulgaris*, NE Gardno, B-Qr, 0, VIII 1996.
- Septoria urticae* Rob. ex Desmaz. — on *Urtica dioica*, Dolgie Male, Bp, +, Dolgie Duze, Rn-A, +, Czolpino, M-Sa, ++, Gać, F-G, +, IX 1996, VIII 1997, IX 1998; on *U. urens*, Kluki, C-P, 0, IX 1998.
- Septoria veronicae* Rob. in Desmaz. — on *Veronica chamaedrys*, NE Gardno, B-Qr, +, IX 1997; on *V. montana*, Dolgie Duze, Rn-A, 0, VIII 1998. First record for Poland. Observed in other regions of the Middle Europe (Brandenburger 1985).
- Stagonospora arenaria* Sacc. — on *Elymus arenarius*, Czolpino, M-Sa, +, VII–VIII 1997. On *E. arenarius* near Szczecin (Madj 1965).
- Stenella subsanguinea* (Ellis et Ev.) Braun — on *Maianthemum bifolium*, Dolgie Duze, Rn-A, 0, VIII 1998. On *M. bifolium* in the Tatra Mts. (Starmachowa 1963), in the Łęczyńsko-Włodawskie Lake District (Mulencko 1988) and in the Białowieża National Park (Mulencko 1996). There is lack of data on the presence of *S. subsanguinea* in the Baltic Sea coastal regions.
- Trichothecium roseum* (Pers.: Fr.) Link — on *Aegopodium podagraria*, Gać, F-G, 0, IX 1998; on *Angelica sylvestris*, Dolgie Duze, Rn-A, 0, IX 1998; on *Dactylis glomerata*, Dolgie Male, Bp, 0, VIII 1998; on *Gnaphalium uliginosum*, Kluki, C-P, 0, IX 1998; on *Myosotis arvensis*, Czolpino, M-Sa, 0, VIII 1998; on *Polygonatum multiflorum*, NE Gardno, B-Qr, 0, VIII 1998; on *Senecio jacobaea*, Dolgie Duze, Rn-A, 0, VIII 1998; on *Stellaria media*, Dolgie Male, Bp, 0, VIII 1998; on *Viola tricolor*, Dolgie Male, Bp, 0, VIII 1998.
- Verticillium* spp. — on *Artemisia vulgaris*, Kluki, C-P, 0, VII 1998; on *Avena fatua*, Dolgie Male, Bp, 0, VIII 1997; on *Centaurea cyanus*, Gać, F-G, 0, VII 1998; on *Convallaria majalis*, Dolgie Male, Bp, 0, VII 1996; on *Dactylis glomerata*, NE Gardno, B-Qr, 0, VIII 1998; on *Odontites serotina*, Czolpino, M-Sa, 0, IX 1998; on *Geranium pratense*, Dolgie Duze, Rn-A, 0, VIII 1998; on *Gnaphalium sylvaticum*, Kluki, C-P, 0, IX 1998; on *G. uliginosum*, Kluki, C-P, 0, IX 1998; on *Hypericum perforatum*, Dolgie Duze, Rn-A, 0, VII 1996; on *Lapsana communis*, Dolgie Male, Bp, 0, VII 1996; on *Lolium perenne*,

Kluki, C-P, 0; VIII 1998; on *Myosotis arvensis*, Czolpino, M-Sa, 0, VIII 1998; on *Papaver rhoeas*, Kluki, C-P, 0, VII–VIII 1998; on *Polygonum amphibium*, Kluki, C-P, 0, IX 1998; on *Senecio viscosus*, NE Gardno, B-Qr, 0, IX 1998; on *Sisymbrium officinale*, Gać, F-G, 0, VIII 1996; on *Senecio fuchsii*, Gać, F-G, 0, VII 1996; on *Sorbus aucuparia*, NE Gardno, B-Qr, 0, VIII 1998; on *Succisa pratensis*, Dolgie Duże, Rn-A, 0, VII 1996; on *Trifolium alpestre*, Kluki, C-P, 0, VIII 1996; on *T. repens*, Gać, F-G, 0, VII 1998; on *Taraxacum officinale*, NE Gardno, B-Qr, 0, IX 1998; on *Vaccinium myrtillus*, Dolgie Małe, Bp, 0, IX 1998; on *Viola tricolor*, Dolgie Małe, Bp, 0, IX 1998.

### SUMMARY AND CONCLUSIONS

1. In the seven plant associations of the Slowiński National Park considered, i.e., *Betuletum pubescentis*, *Betulo-Quercetum roboris*, *Cirsio-Polygonetum*, *Filipendulo-Geraniatum*, *Myrico-Salicetum auritae*, *Phragmitetum australis*, and *Ribo nigri-Alnetum*, a total of 310 species in 79 genera of fungus-like organisms and fungi were found.
2. Most species of fungus-like organisms and fungi were revealed in the relatively warmest and most humid year 1998.
3. Most species came from mitosporic fungi (103) and the phylum Basidiomycota (99), and least from the phylum Oomycota (31). Further long-term and regular investigations beginning from early spring to late autumn in each year are needed to determine the real species diversity of fungus-like organisms and fungi and their seasonal appearance in the Slowiński National Park.
4. The microorganisms most frequently revealed were members of the genus *Puccinia*.
5. Among the taxa of fungus-like organisms and fungi identified, there were 43 and 18 species earlier infrequently or for the first time recorded in Poland, respectively. In the latter group of microorganisms, *Schizothyrioma ptar-nicae* occurred, a member of *Leotiales* earlier infrequently revealed in Europe.
6. Most species of fungus-like organisms and fungi were associated with plants of the *Cirsio-Polygonetum* plant association (129), and least with those of *Phragmitetum australis* (22). The plant harbouring the highest number of species was *Agropyron repens*.
7. Of the 310 species of fungus-like organisms and fungi found in the Slowiński National Park, 51 occurred on 69 plant species for the first time noted in Poland to be their hosts.
8. Among the species of the order *Erysiphales* encountered, seven were for the first time recorded in Poland as fungal hosts of *Ampelomyces quisqualis*, a commonly occurring hyperparasite of the powdery mildew fungi.



9. The high participation of severe pathogens among the species of fungus-like organisms and fungi revealed suggests that the health of vegetation of the Słowiński National Park may be in danger, especially by pathogens of the orders *Peronosporales*, *Erysiphales*, and *Uredinales*. Because the Słowiński National Park comprises 28 disappearing, threatened or rare taxa for Poland (Piotrowska, Żukowski and Jackowiak 1997), further studies aimed at elaboration of strategy of protection of the most valuable plant species should be conducted.

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## Mikroskopijne organizmy grzybopodobne i grzyby Słowińskiego Parku Narodowego. II.

### Streszczenie

Niniejsza część 2-częściowego opracowania przedstawia wyniki 3-letnich badań nad występowaniem mikroskopijnych, saprotroficznych i pasożytniczych organizmów grzybopodobnych i grzybów w siedmiu naturalnych zbiorowiskach roślinnych Słowińskiego Parku Narodowego. Wymieniono 310 ujawnionych gatunków z 79 rodzajów i przedstawiono ich częstość występowania zarówno w pojedynczym zbiorowisku roślinnym, jak i we wszystkich uwzględnionych stanowiskach. W przypadku gatunków wcześniej rzadko znajdujących lub stwierdzonych w Polsce po raz pierwszy, przedstawiono również ich rozmieszczenie ogólne.