

Contributions to the distribution of *Erysiphales* in Poland

MARIA DYNOWSKA, GRZEGORZ FIEDOROWICZ and DARIUSZ KUBIAK

Department of Botany, Institute of Biology and Environmental Protection
Higher Teacher Education School
Żołnierska 14, PL-10-561 Olsztyn, Poland

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This paper presents the list of 50 species of *Erysiphales* and describes their localities concentrated mainly within north-eastern Poland. New localities and host have been determined. Many of the identified species were common in the area under studied, although they have been considered hitherto rare in Poland.

Key words: *Erysiphales*, host plants, occurrence.

INTRODUCTION

In the years 1982–1995, studies concerning the occurrence of *Erysiphales* were conducted in different parts of Poland, with particular focus on their bioindicative properties (Dynowska 1993, 1994). Earlier studies of ecological nature (Mikołajska and Dynowska 1982) covered the area of Masurian Lake District. In this paper, which is a continuation of earlier observations, the area studied was expanded while the different status of the environment was used as the criterion. As a consequence the present study includes Płock and its surroundings and even the area of Skierniewice province (Fig. 1). The studies of indicator species of powdery mildew also a contribution to the review of all fungi in that systematic group. At the same time they allowed identification of new locations. It seems that they fill the white spots on the maps of distribution of *Erysiphales* in Poland and expand the knowledge concerning the ecology of those fungi. This is particularly important in the case of powdery mildew growing on wild plants as much less attention is devoted to them than to powdery mildew being which is a parasite on cultivated plants.

We would like to extend our thanks to late Prof. B. Sałata, D.Sc. and Dr. W. Mulencko for making available their herbarium as well as the data and literature concerning the occurrence of powdery mildew in Poland.

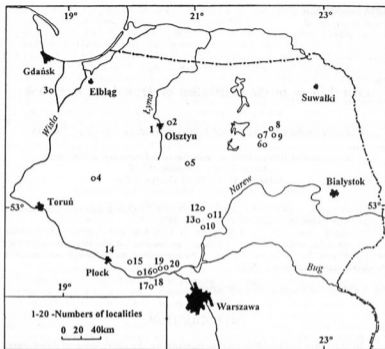


Fig. 1. Localities of fungi: 1 – Olsztyn, 2 – Wójtowo, 3 – Mały Garc, 4 – Brodnica, 5 – Wielbark, 6 – Biała Piska, 7 – Oblewo, 8 – Komorowo, 9 – Pawlocin, 10 – Maków Mazowiecka, 11 – Młodzianowo, 12 – Węgrzynowo, 13 – Jaciążek, 14 – Płock, 15 – Miszewo Murowane, 16 – Wyszogród, 17 – Młodzieszyn, 18 – Wychódź, 19 – Chociszewo, 20 – Golawin

RESULTS

In total, 50 species of *Erysiphales* belonging to 7 genera were collected on 122 host plants. The most numerous were: *Erysiphe* – 24 species, *Microsphaera* – 10 species and *Sphaerotheca* – 8 species. The most powdery mildew species were found on representatives of the genera: *Asteraceae* – 21 species, *Fabaceae* – 13 species, *Lamiaceae* – 10 species and *Apiaceae* and *Rosaceae* – 9 species. On many host plants only oidium was present, which might indicate unfavorable conditions for development of sexual forms or the initial stage of infestation of a new position. It was found that some powdery mildews developed only oidia in

new locations and only after a number of years cleistotecia appear (M a j e w s k i 1972; G o r l e n k o 1974; M a d e j 1976).

Species of powdery mildew occurring over the entire area of Poland form the vast majority. It is noteworthy that the species which in this paper could be treated as very common in north-eastern Poland were considered rare in Poland by S a ł a t a (1985). The examples include *Erysiphe cichoracearum* on *Taraxacum officinale*, *Microsphaera berberidis* on *Berberis vulgaris* and *B. tunbergii*, *E. sordida* on *Plantago media* or *M. lonicerae* on *Lonicera xylosteum*. The determination of new habitats (*E. cichoracearum* on *Capsella bursa-pastoris*, *E. verbasci* on *Verbascum phlomoides*) results from the lack of coordination in ecological studies on parasite fungi all over the country. The abundant occurrence of powdery mildew in north-eastern Poland may be linked to high air humidity (M a j e w s k i 1971) and low level of industrial pollution as well as warming up of the climate in the past years. This confirms that the species studied are of bioindicatory value (D y n o w s k a 1994, 1996).

More detailed data were included in the list of species.

Species were identified following Blumer (1976), Sałata (1985) and Braun (1987). The host plants were given after Mirek, Piękoś-Mirek, Zając and Zając (1995).

The identified materials are deposited at the Department of Botany, Institute of Biology and Environmental Protection, Higher Teacher Education School in Olsztyn.

LIST OF FUNGI

The abbreviations used throughout this paper are as follows: BP — Biała Piska, Br — Brodnica, MM — Maków Mazowiecki, Ol — Olsztyn, Pl — Płock, Wk — Wielbark

Erysiphe artemisiae Grev. — on *Artemisia vulgaris* L.: BP, park, 09.1982 and 6.10.1987; Br, roadside, 10.1991; MM, roadside, 8.10.1992; Ol, 7.1984 and 15.09.1989; Pl, Kostrogaj, 29.09.1987; Wk, roadside, 07.1989. — on *A. absinthium* L.: BP, park, 5.10.1987. Pl, town waste land, 26.08.1988. — on *Arctium minus* (Hill) Bernh.: BP, roadside, 5.10.1987.

Erysiphe asperifoliorum Grev. — on *Anchusa arvensis* (L.) M. Bieb.: Ol, 15.09.1989. On this host plant the species noted only from Lublin and the vicinity of Skierniewice and Pruszków (Sałata 1985). — on *A. officinalis* L.: BP, meadow, 25.09.1988; Wk, roadside, 08.1989. — on *Myosotis sylvatica* Ehrh. ex Hoffm.: Komorowo near BP, forest, 16.09.1987. On this host plant the species also reported only from Szczecin and Dolina Chochołowska (Sałata 1985). — on *Symphytum officinale* L.: Br, roadside, 10.1991.

- Erysiphe buhrii* U. Braun — on *Melandrium album* (Mill.) Garcke: Br, lawn near stadium, 09.1991; Ol, 08.1984; Wk, meadow by the river, 09.1989. The species reported from scattered localities in the lowland part of Poland and the Pieniny Mountains (S a ł a t a 1985).
- Erysiphe cichoracearum* DC. ex Mérat — on *Achillea millefolium* L.: Pł, 11.09.1988. — on *Capsella bursa-pastoris* (L.) Medinear: Pawlocin near BP, forest, 22.09.1987. — on *Carduus crispus* L.: BP, park, 7.09.1988; Br, forest, 10.1992; Pł, forest, 31.08.1988; Wk, forest, 08.1989. On this host plant the species is known to occur in Szczecin and Dąbrowo near Nowy Dwór Mazowiecki (S a ł a t a 1985). — on *Cucurbita pepo* L.: MM, garden, 25.09.1992. — on *Solidago canadensis* L.: Ol, 08.1984; Mały Garc near Tczew, meadow, 07.1983; Pł, on the bank of the Vistula River, 28.09.1987; BP, garden, 27.09.1987; Pł, town waste land, 17.09.1987; Wk, forest, 09.1989. — on *Sonchus arvensis* L.: BP, allotment, 12.10.1987; Ol, 07.1984; Pł, forest, 10.09.1988. — on *S. oleraceus* L.: Ol, 09.1984. — on *Tanacetum vulgare* L.: BP, roadside, 3.10.1987; Pł, town waste land, 15.09.1987; Wk, meadow by the river, 09.1989. — on *Taraxacum officinale* F. H. Wigg.: Ol, roadside, 07.1984. Not recorded in Poland on this host plant (S a ł a t a 1985). — on *Tussilago farfara* L.: Br, roadside, 09.1991. — on *Viola x wittrockiana* Hort.: BP, flower-bed, 12.11.1987; Pł, town waste land, 26.08.1988.
- Erysiphe circaeae* L. Junell — on *Oenothera biennis* L.: Ol, roadside, 15.09.1989.
- Erysiphe convolvuli* DC. ex St.-Am. — on *Convolvulus arvensis* L.: BP, roadside, 15.08.1988; Br, lawn, 08.1991; MM, roadside, 14.09.1991; Pł, on the bank of the Vistula River, 21.08.1987, Wk, town waste land, 09.1989.
- Erysiphe cruciferarum* Opiz ex L. Junell — on *Berteroa incana* (L.) DC.: Ol, 07.1984. — on *Brassica napus* L. ssp. *napus*: Pł, town waste land, 10.09.1988. — on *B. oleracea* L. ssp. *capitata* (L.) Duchesne: Pł, town waste land, 7.09.1988. — on *Capsella bursa-pastoris* (L.) Medinear: Ol, roadside, 15.09.1989. On this host plant the species also reported from Białowieża and the surroundings of Warszawa and Nowy Sącz (S a ł a t a 1985). — on *Descurainia sophia* (L.) Webb ex Prantl: Ol, 15.09.1989; Pł, on the bank of the Vistula River, 11.09.1987; Wk, town waste land, 08.1989.
- Erysiphe depressa* (Wallr.) ex Schlecht. — on *Arctium lappa* L.: BP, roadside, 15.09.1987; Ol, 08.1984; Pł, town waste land, 29.08.1987. — on *A. minus* (Hill) Bernh.: BP, roadside, 15.09.1988; Wk, town waste land, 08.1989. — on *A. tomentosum* Mill.: Br, meadow, 09.1991; Ol, 08.1984; Mały Garc near Tczew, meadow, 08.1983.
- Erysiphe fischeri* Blumer — on *Senecio sylvaticus* L.: Pł, Tysiąclecie housing estate, 18.09.1988. — on *S. vulgaris* L.: Ol, 15.09.1989; Wk, town waste land, 08.1989. The fungus reported only from a few localities in Poland: Łąck — on *S. sylvestris*; Szczecin — on *S. viscosus*; Wrocław, Ożarów and Lublin — on *S. vulgaris* (S a ł a t a 1985).

- Erysiphe galeopsidis* DC. ex Mérat — on *Galeopsis ladanum* L.: Pł, on the bank of the Vistula River, 29.08.1987. On this host plant the species had been reported from Złotno near Kłodzko and from the surroundings of Szczecin (S a ł a t a 1985). — on *G. tetrahit* L.: BP, park, 6.10.1987; MM, park, 29.07.1992; Pł, forest, 31.08.1988. — on *Glechoma hederacea* L.: BP, roadside, 15.09.1987; Ol, 15.09.1989; Wk, field, 8.1989. — on *Lamium album* L.: BP, town waste land, 13.10.1987; MM, roadside, 14.09.1991. — on *L. amplexicaule* L.: BP, town waste land, 17.09.1987. On this host plant the species also reported from the surroundings of Szczecin and Nowy Dwór near Trzebnica (S a ł a t a 1985). — on *L. purpureum* L.: BP, town waste land, 17.10.1987; Wk, town waste land, 08.1989. — on *Leonurus cardiaca* L.: BP, park, 16.09.1988; Pł, on the bank of the Vistula River, 11.09.1988. — on *Stachys sylvatica* L.: Pawłocin near BP, forest, 23.08.1987.
- Erysiphe galii* (Fuckel) ex Blumer — on *Galium aparine* L.: Komorowo near BP, meadow, 8.09.1987; Wk, town waste land, 09.1989. — on *G. odoratum* (L.) Scop.: Komorowo near BP, forest, 8.09.1987. — on *G. mollugo* L.: Br, meadow, 08.1992. On this host plant the fungus reported from only a few scattered localities in Central Poland (S a ł a t a 1985), the Pieniny Mountains (K u ć m i e r z 1976), Olsztyn (M i k o ł a j s k a and D y n o w s k a 1982) and the Tatra Mountains (M u ł e n k o, S a ł a t a and W o ł c z a ń s k a 1995).
- Erysiphe graminis* DC. ex Mérat — on *Dactylis glomerata* L. ssp. *glomerata*: Wk, meadow by the river, 08.1989. — on *Poa annua* L.: Oblewo near BP, meadow, 23.09.1987.
- Erysiphe heraclei* (DC.) St.-Am. — on *Aegopodium podagraria* L.: BP, park, 09.1983; BP, allotment, 26.08.1988; Wk, town waste land, 09.1989. — on *Aethusa cynapium* L.: MM, park, 18.08.1991. On this host plant the species has been found to occur in Central Europe, however, until recently not reported from Poland (S a ł a t a 1985). — on *Anthriscus sylvestris* (L.) Hoffm.: Komorowo near BP, forest, 14.09.1988. — on *Chaerophyllum temulum* L.: MM, park, 12.09.1991. — on *Daucus carota* L.: Mały Garc near Tzew, meadow, 08.1983. On this host plant the species reported from the surroundings of Szczecin, of Puławy and of Pieniny Mountains (S a ł a t a 1985). — on *Heracleum sibiricum* L.: BP, town waste land, 25.10.1987; Br, roadside, 08.1991; Chociszewo near Czerwińsk on the Vistula River, roadside, 22.08.1994; Młodzieszyn near Sochaczew, roadside, 2.09.1995; Ol, town waste land, 09.1984; Pł, town waste land, 13.09.1987; Pł, on the bank of the Vistula River, 11.09.1988; Wójtowo near Ol, forest, 09.1982; Wyszogród, roadside, 24.08.1994; Wk, riverside thickets, 08.1989. — on *Pastinaca sativa* L.: Br, roadside, 10.1992. — on *Petroselinum crispum* (Mill.) A. W. Hill: BP, allotment, 13.09.1987; Br, garden, 09.1991. On this host plant the species not reported from

- north-eastern Poland (S a ł a t a 1985). — on *Selinum carvifolia* (L.) L.: Wk, forest, 08.1989. On this host plant the species reported from Wrocław, Siedlce and the surroundings of Zielona Góra and Szczytów near Dzierżoniów (S a ł a t a 1985).
- Erysiphe hyperici* (Wallr.) ex Blumer — on *Hypericum perforatum* L.: Wójtowo near Ol, forest, 07.1982.
- Erysiphe knautiae* Duby — on *Knautia arvensis* (L.) J. M. Coult.: Oblewo near BP, meadow, 17.09.1987; Pł, forest, 10.09.1988.
- Erysiphe magnicellulata* U. Braun — on *Phlox paniculata* L.: BP, allotment, 8.09.1987; Br, flower-bed, 09.1991; MM, garden, 25.10.1992; Ol, allotment, 15.09.1989; Pł, allotment, 26.08.1988.
- Erysiphe pisi* DC. ex St.-Am. — on *Vicia cracca* L.: BP, flower-bed, 8.09.1988; Ol, 15.09.1989. — on *Vicia hirsuta* (L.) S. F. Gray: Ol, 08.1984. On this host plant the species reported from Białowieża Forest and Drohiczyń near Siemiatycze (S a ł a t a 1985).
- Erysiphe polygoni* DC. ex St.-Am. — on *Polygonum aviculare* L.: Br, roadside in forest, 09.1991; Ol, town waste land, 07.1984; Ol, 15.09.1989; Pł, Tysiąclecie housing estate, 17.09.1987; Wk, town waste land, 09.1989.
- Erysiphe ranunculi* Grev. — on *Ranunculus acris* L. s.s.: BP, park, 16.09.1988; Pł, on the bank of the Vistula River, 19.08.1988; Wk, town waste land, 8.1989. — on *R. repens* L.: Oblewo near BP, meadow, 27.09.1987.
- Erysiphe sordida* L. Junell — on *Plantago major* L.: BP, roadside, 24.09.1988; Br, meadow, 09.1991; Mały Garc near Tczew, meadow, 09.1983; Miszewo Murowane near Pł, roadside, 28.08.1994; MM, garden, 25.08.1991; Ol — Kolonia Mazurska, 08.1984; Pł, town waste land, 11.09.1987, on the bank of the Vistula River, 31.08.1994 and lawn, 31.08.1994; Wyszogród, roadside, 24.09.1994 and park, 11.09.1995. — on *P. media* L.: BP, park, 10.1982.
- Erysiphe trifolii* Grev. — on *Caragana arborescens* Lam.: BP, roadside, 25.09.1987; Pł, on the bank of the Vistula River, 29.08.1987; Wk, 09.1989. — on *Lathyrus odoratus* L.: BP, allotment, 25.09.1988. — on *Lupinus polyphyllus* Lindl.: BP, park, 08.1982 and roadside, 15.10.1987; Br, roadside, 09.1992; Ol, town waste land, 08.1984; Pł, town waste land, 11.09.1987; Wk, 09.1989. — on *Melilotus alba* Medinear: BP, park, 08.1982; Br, meadow, 10.1991; Młodzianowo near MM, town waste land, 20.09.1992; Ol, 07.1984 and 15.09.1989; Wk, meadow by the river, 09.1989. — on *M. officinalis* (L.) Pall.: Pł, on the bank of the Vistula River, 17.09.1987; Węgrzynowo near MM, lawn, 10.10.1992. — on *Trifolium hybridum* L. ssp. *hybridum*: BP, meadow, 25.08.1987, Ol — Kolonia Mazurska, 09.1984; Ol — Kortowo, forest, 10.1984; Wk, meadow by the river, 09.1989. — on *T. incarnatum* L.: Ol, 10.1984. — on *T. medium* L.: BP, park, 23.09.1987; Ol, 09.1984; Wójtowo near Ol, forest, 08.1982. — on *T. pratense* L.: BP, lawn, 27.08.1988; Ol — Kortowo, forest, 09.1984;

- Ol, town waste land, 09.1984 and 15.09.1989; Pł, town waste land, 17.09.1987; Wk, thickets, 08.1989. — on *T. repens* L. ssp. *repens*: Br, lawn, 10.1991; Ol — Kolonia Mazurska, 08.1984.
- Erysiphe urticae* (Wallr.) ex Blumer — on *Urtica dioica* L.: BP, park, 8.09.1988; Br, roadside, 09.1992; Mały Garc near Tczew, meadow, 10.1983; MM, forest, 20.10.1991; Pł, forest, 10.09.1988; Wk, garden, 08.1989.
- Erysiphe valerianae* (Jacz.) Blumer — on *Valeriana officinalis* L.: Pł, town waste land, 26.08.1987.
- Erysiphe verbasci* (Jacz.) Blumer — on *Verbascum phlomoides* L.: Br, roadside, 10.1992. On this host plant the species reported from the surroundings of Kazimierz Dolny and Łęczna as well as from Puławy and Żegiestów-Zdrój (S a ł a t a 1985).
- Microsphaera alphitoides* Griff. et Maubl. — on *Quercus robur* L.: BP, park, 09.1982; Chociszewo near Czerwińsk on the Vistula River, roadside, 9.11.1994; Goławin near Czerwińsk on the Vistula River, roadside, 3.09.1994; Jaciążek near MM, forest, 21.09.1992; Ol — Kortowo, forest, 09.1984 and park, 09.1990; Ol, park by the Łyna River, 10.1990; Ol — Kolonia Mazurska, roadside, 10.1990; Pawlocin near BP, forest, 3.11.1988; Pł, forest, 10.09.1988; Pł, square, 12.09.1995; Wychódź near Czerwińsk on the Vistula River, roadside, 27.08.1994. — on *Q. petraea* (Matt.) Liebl.: Wk, forest, 10.1989. On this host plant the species not reported from the Masurian Lake District (S a ł a t a 1985).
- Microsphaera astragali* (DC. ex Mérat) Trev. — on *Astragalus glycyphyllos* L.: Węgrzynowo near MM, meadow, 10.10.1991.
- Microsphaera berberidis* (DC. ex Mérat) Liv. — on *Berberis koreana* (Blaze) L.: BP, park, 11.1982; Br, square, 09.1991; Ol, 09.1990. This is a new host plant to this fungus (Blumer 1967; S a ł a t a 1985). — on *B. thunbergii* DC.: Ol, 15.09.1989 and lawn near sports hall, 09.1990; Pł, 15.09.1988. — on *B. vulgaris* L.: Br, square, 09.1991; Ol, 08.1984, 15.09.1989, 09.1990 and lawn near sports hall, 09.1990; Ol — Kortowo, 10.1990. — on *Mahonia aquifolium* (Pursh) Nutt.: Br, square, 10.1991; Pł, Tysiąclecie housing estate, 15.10.1988. On this host plant the species reported from Lublin (S a ł a t a 1985).
- Microsphaera euonymi* (DC. ex Mérat) Sacc. — on *Euonymus europaeus* L.: BP, park, 08.1982; Br, lawn near stadium, 10.1991.
- Microsphaera friesii* Lév. — on *Rhamnus catharticus* L.: BP, park, 23.09.1988.
- Microsphaera hypophylla* Nevod. — on *Quercus robur* L.: Komorowo near BP, forest, 17.09.1988; Ol — Kortowo, forest, 09.1984. The species rare in Poland (S a ł a t a 1985).
- Microsphaera lonicerae* (DC.) Wint. — on *Lonicera xylosteum* L.: Pł, Tysiąclecie housing estate, 25.08.1988. On his host plant the species was reported

from one unconfirmed locality — Mory near Warsaw (S a ł a t a 1985).
— on *Lonicera* sp.: Br, square, 09.1992.

Microsphaera oronata U. Braun var. *europaea* U. Braun — on *Betula pendula* Roth.: Ol, park, 09.1990. The fungus on this host plant was reported as *M. betulae* P. Magn. from localities that require confirmation: Łubki near Włocławek, Chalinek near Lipno and the surroundings of Zielona Góra (S a ł a t a 1985).

Microsphaera palczewskii Jacz. — on *Caragana arborescens* Lam.: MM, square, 25.10.1992; Ol, 09.1990; Ol — Kortowo, 09.1990. For the first time found in Poland in 1981 in Urszulin near Włodawa. At present it is a frequently found (S a ł a t a 1985; R o m a s z e w s k a-S a ł a t a, S a ł a t a and M u ł e n k o 1986).

Microsphaera vanburtiana Gérard — on *Sambucus racemosa* L.: BP, park, 23.09.1988; Ol, 09.1990; Wk, 09.1989. According to S a ł a t a (1985) this fungus is found occasionally in Europe in Italy, Germany, Ukraine and Slovakia. In Poland reported from very few stands (R o m a s z e w s k a-S a ł a t a, S a ł a t a and M u ł e n k o 1986).

Phyllactinia berberidis Palla — on *Berberis vulgaris* L.: Wk, 08.1989. This fungus has been recorded in Puławy and Włostowice near Puławy (S a ł a t a 1985). It is very common within the area studied.

Phyllactinia guttata (Wallr. ex Fr.) Lév. — on *Acer platanoides* L.: Br, roadside, 10.1991. This is a new host plant to this species (B l u m e r 1967; S a ł a t a 1985). — on *Carpinus betulus* L.: Ol, 09.1990; Ol — Jakubowo, park, 10.1990.

Phyllactinia mali (Duby) U. Braun — on *Malus* sp.: Pł, town waste land, 20.07.1987. In Poland there has been described several localities on representatives of *Prunus padus* L. (R o m a s z e w s k a-S a ł a t a, S a ł a t a and M u ł e n k o 1986), *Crataegus* sp. and *Pyrus* sp., not encountered on *Malus* spp. (S a ł a t a 1985).

Phyllactinia roboris (Gachet) Blumer — on *Quercus robur* L.: Br, forest, 09.1991. In Poland reported from Szembruk near Grudziądz, Brachów near Jawor and Łomnica near Bystrzyca Kłodzka (S a ł a t a 1985).

Podosphaera tridactyla (Wallr.) de Bary — on *Padus avium* Mill.: Komorowo near BP, forest, 26.09.1988. — on *Prunus* sp.: BP, park, 23.08.1988.

Sawadea tulasnei (Fuck.) Homme — on *Acer platanoides* L.: Br, roadside, 10.1991; Ol, 09.1990 and park by the Łyna River 10.1990; Ol — Kortowo, 09.1990.

Sphaerotheca alchemillae (Grev.) L. Junell — on *Alchemilla monticola* Opiz: Wk, meadow, 10.1989. — on *Geum rivale* L.: BP, meadow, 24.07.1988. On this host plant the species reported from Białowieża Forest and from the surroundings of Pruszków and Czorsztyn (S a ł a t a 1985). — on *Potentilla fruticosa* L.: Ol, 09.1990.

- Sphaerotheca balsaminae* (Wallr.) Kari — on *Impatiens noli-tangere* L.: BP, park, 24.07.1988.
- Sphaerotheca erigerontis-canadensis* (Lév.) L. Junell — on *Crepis paludosa* (L.) Moench: BP, park, 08.1982. — on *Taraxacum officinale* F. H. Wigg.: Br, meadow, 11.1992; Obledo near BP, meadow, 23.09.1987; Ol, 09.1984; Młodzieszyn near Sochaczew, lawn, 2.09.1995; Pl, on the bank of the Vistula River, 11.09.1987; Wk, meadow, 09.1989; Wójtowo near Ol, forest, 08.1982.
- Sphaerotheca euphorbiae* (Cast.) Salmon — on *Euphorbia peplus* L.: Pl, Kostrogaj, 15.09.1988.
- Sphaerotheca mors-uvae* (Schw.) Berk. — on *Ribes nigrum* L.: BP, allotment, 12.08.1987; Br, garden, 11.1992; Wk, town waste land, 7.1989.
- Sphaerotheca pannosa* (Wallr. ex Fr.) Lév. — on *Prunus domestica* L. ssp. *domestica*: BP, allotment, 24.10.1987. — on *Rosa* sp.: BP, park, 10.1982.
- Sphaerotheca plantaginis* (Cast.) L. Junell — on *Plantago major* L.: Br, lawn, 10.1991; MM, roadside, 25.08.1992; Ol, 08.1984.
- Sphaerotheca xantii* (Cast.) L. Junell — on *Bidens tripartita* L.: Mały Garc near Tczew, meadow, 07.1983. — on *Calendula officinalis* L., BP, flower-bed, 3.10.1988; Br, garden, 09.1991; Pl, 28.09.1987.
- Uncinula bicornis* (Wallr. ex Fr.) Lév. — on *Acer negundo* L.: Ol, 09.1990; Pl, on the bank of the Vistula River, 17.08.1988. — on *A. pseudoplatanus* L.: BP, roadside, 26.09.1988; MM, park, 28.07.1991; Pl, on the bank of the Vistula River, 10.09.1988; Wk, forest, 09.1989.
- Uncinula adunca* (Wallr. ex Fr.) Lév. — on *Populus nigra* L.: Pl, town waste land, 10.09.1988.
- Oidium* sp. — on *Acer negundo* L.: BP, roadside, 16.09.1987; Wk, forest, 9.1989. — on *A. platanoides* L.: MM, park, 18.07.1991. — on *Arctium lappa* L.: Mały Garc near Tczew, meadow, 09.1983. — on *A. minus* (Hill) Bernh.: Mały Garc near Tczew, meadow, 07.1983. — on *Armoracia rusticana* P. Gaertn., B. Mey. and Scherb.: Br, garden, 09.1992; MM, garden, 15.09.1992. — on *Bellis perennis* L.: BP, meadow, 24.09.1988; Pl, town waste land, 23.09.1988. — on *Chelidonium majus* L.: BP, park, 08.1983. — on *Cucumis sativus* L.: Br, garden, 08.1992; Pl, allotment, 10.09.1988. — on *Cucurbita pepo* L.: Br, garden, 08.1992. — on *Echium vulgare* L.: Wk, town waste land, 09.1989. — on *Galeobdolon luteum* Huds. ssp. *luteum*: BP, park, 8.10.1987. — on *Lycium barbatum* L.: Br, lawn near stadium, 09.1992. — on *Mentha arvensis* L.: Pl, town waste land, 23.09.1988. — on *Mycelis muralis* (L.) Dumort.: Wójtowo near Ol, forest, 09.1982. — on *Petroselinum crispum* (Mill.) A. W. Hill: Pl, town waste land, 23.09.1988. — on *Cerasus vulgaris* Mill.: Wk, 09.1989. — on *Quercus robur* L.: MM, forest, 28.07.1991. — on *Rosa glauca* Pourr.: Ol, 10.1984. — on *Rosa* sp.: Br, square, 10.1992; Wk, 08.1989. — on *Rumex acetosa* L.:

Br, lawn near stadium, 09.1991. — on *Sambucus nigra* L.: Br, lawn near stadium, 10.1991. — on *Solidago canadensis* L.: Br, lawn near stadium, 10.1991. — on *S. gigantea* Aiton: Ol — Kolonia Mazurska, lawn, 10.1984. — on *Symphoricarpos albus* (L.) S. F. Blake: Br, square, 9.1991. — on *Tanacetum vulgare* L.: Ol, 15.09.1989. — on *Tilia cordata* Mill.: Ol — Kortowo, park, 10.1990. — on *Viola tricolor* L. s. s.: Wk, field, 09.1989. — on *Viola x wittrockiana*: BP, flower-bed, 16.09.1988.

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Materiały do rozmieszczenia *Erysiphales* Polski

Streszczenie

Praca jest podsumowaniem obserwacji (1982—1995) nad występowaniem *Erysiphales* w różnych częściach Polski ze szczególnym zwróceniem uwagi na zanieczyszczenia środowiska i ewentualne wyłonienie gatunków o właściwościach bioindykacyjnych. Pozwoliły one na stwierdzenie szeregu nowych stanowisk i nowych żywicieli. Wiele z wymienionych grzybów pospolicie występuje na badanym terenie ale w Polsce uważane są dotychczas za rzadkie; np. *Erysiphe cichoracearum* na *Taraxacum officinale*. Ogółem zebrano 50 gatunków na 122 roślinach żywicielskich.