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New and rare species of parasitic fungi in Poland

AGATA WOŁCZAŃSKA[1] and KRZYSZTOF OKLEJEWICZ[2]

[1] Department of General Botany, Institute of Biology, Maria Curie-Skłodowska University
Akademicka 19, PL-20-033 Lublin, Poland
[2] Department of Biology and Environmental Protection, University of Rzeszów
Rejtana 16C, PL-35-959 Rzeszów, Poland

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The paper presents characteristics of 14 species of microscopic phytopathogenic fungi collected in the Beskid Niski Mts. and Doły Jasielsko-Sanockie. One of them – *Phyllosticta telekiae* Cejp, Fassat et Zavřel is a new species for Poland, five were collected on new host plants, and the others are known from a few localities.

Key words: *Erysiphales*, *Uredinales*, mitosporic fungi (*Deuteromycotina*), S Poland, distribution.

INTRODUCTION

There are differences in the knowledge of microscopic phytopathogenic fungi in Poland both with regard to the particular taxonomic groups and individual regions. Changes of the natural environment and migrations of plants result in finding new species, on new hosts and in new localities.

During floristic and mycological studies carried out from 1991 in the area of the Beskid Niski Mts. and Doły Jasielsko-Sanockie a rich herbarial material has been collected. Among the collected fungi a special attention is deserved by 14 species the characteristics of which is given in this paper. *Phyllosticta telekiae* Cejp, Fassat et Zavřel collected on *Telekia speciosa* (Schreb.) Baumg. is a new species for Poland. Two others: *Erysiphe aquilegiae* DC. var. *ranunculi* (Grev.) Zheng. et Chen (on *Aconitum lasiocarpum* (Rchb.) Gayer) and *Sphaerotheca aphanis* (Wallr.) U. Braun var. *aphanis* (on *Rubus perrohustus* J. Holub) have not been recorded so far in Poland and Europe on these hosts (Sałata 1985, Braun 1995). Attention should be also given to *Erysiphe heraclei* DC. found on *Chaerophyllum aureum* L. This plant is a very rare species and occurs in Poland only in several localities in the Beskid Niski Mts. and in the environs

of Bnin near Poznań (O k l e j e w i c z 1999, 2001). Two other pathogens collected on host plants new for Poland are *Puccinia sessilis* Schneid. (on *Polygonatum odoratum* (Mill.) Druce) and *Coleosporium tussilaginis* (Pers.) Berk. (on *Telekia speciosa* (Schreb.) Baumg.). The other 8 species are parasites known from a few localities in our country. Interesting is *Erysiphe cichoracearum* DC. var. *cichoracearum* on *Aposeris foetida* (L.) Less., which, besides Poland, was not recorded on this host in Europe.

The list of the discussed species contains the following data: the collection locality, ATPOL square (according to Z a j ą c 1978), habitat and date of collection. A short information about the morphology of the fungi has been supplied when differences appeared between the herbarial material and description available in monographies. The names of fungi have been used according to B r a n d e n b u r g e r (1985), B r a u n (1995), M a j e w s k i (1977, 1979) and S a ł a t a (1985), while the nomenclature of host plants according to the work of M i r e k et al. (1995).

LIST OF SPECIES

ERYSIPHALES

Erysiphe aquilegiae DC. var. *ranunculi* (Grev.) Zheng. et Chen [= *Erysiphe ranunculi* Grev.]

Indistinct and disappearing coating persists longer only on flower stalks and peduncles. Cylindrical conidia measuring: 25–26 × 11–12 μm, are a little smaller than those given in literature [S a ł a t a 1985: 24–48 × 15–20 μm; B r a u n 1995: 28–50 × (12–) 18–22 (–25) μm]. Cleistothecia: 92–97 μm in diameter, scattered on both sides of leaves, contain 3 to 8 asci with ascospores: 16–19 × 7–8 μm [S a ł a t a 1985: 18–28 × 10–14 μm; B r a u n 1995: 16–25.5 × 9–15 μm] – on *Aconitum lasiocarpum* (Rchb.) Gayer: Wola Niżna (FG 33 13), alder bushes on the Jasiołka river, 9 IX 1998. As yet this parasite has not been recorded on this host plant in Poland and Europe (S a ł a t a 1985; B r a u n 1995) – on *Aconitum variegatum* L.: Góra Kornuty 830 (EG 19 34), wet ash forest, 4 VIII 1998. On this host in Poland, it was collected only in the Tatra Mts. (S a ł a t a 1985), whilst in Europe, it is known from Germany, Finland, the former Soviet Union, Estonia and former Czechoslovakia (B r a u n 1995).

Erysiphe cichoracearum DC. var. *cichoracearum* – on *Aposeris foetida* (L.) Less.: Zmysłówka near Rymanów (FG 13 14), beech forest, 2 VI 1991; Gniewoszówka near Rymanów (FG 14 20), beech forest, 12 IX 1993. On this host in Poland, this species was collected only in Wetlina in the Bieszczady Mts. (S a ł a t a 1985). Besides Poland it was not recorded in Europe (B r a u n 1995), although host plant occurs in the central part of the continent and in the Balkans (M e u s e l and J ä g e r 1992; Z a j ą c 1996) – on *Serratula tinctoria* L.: Rymanów (FG 13 23),

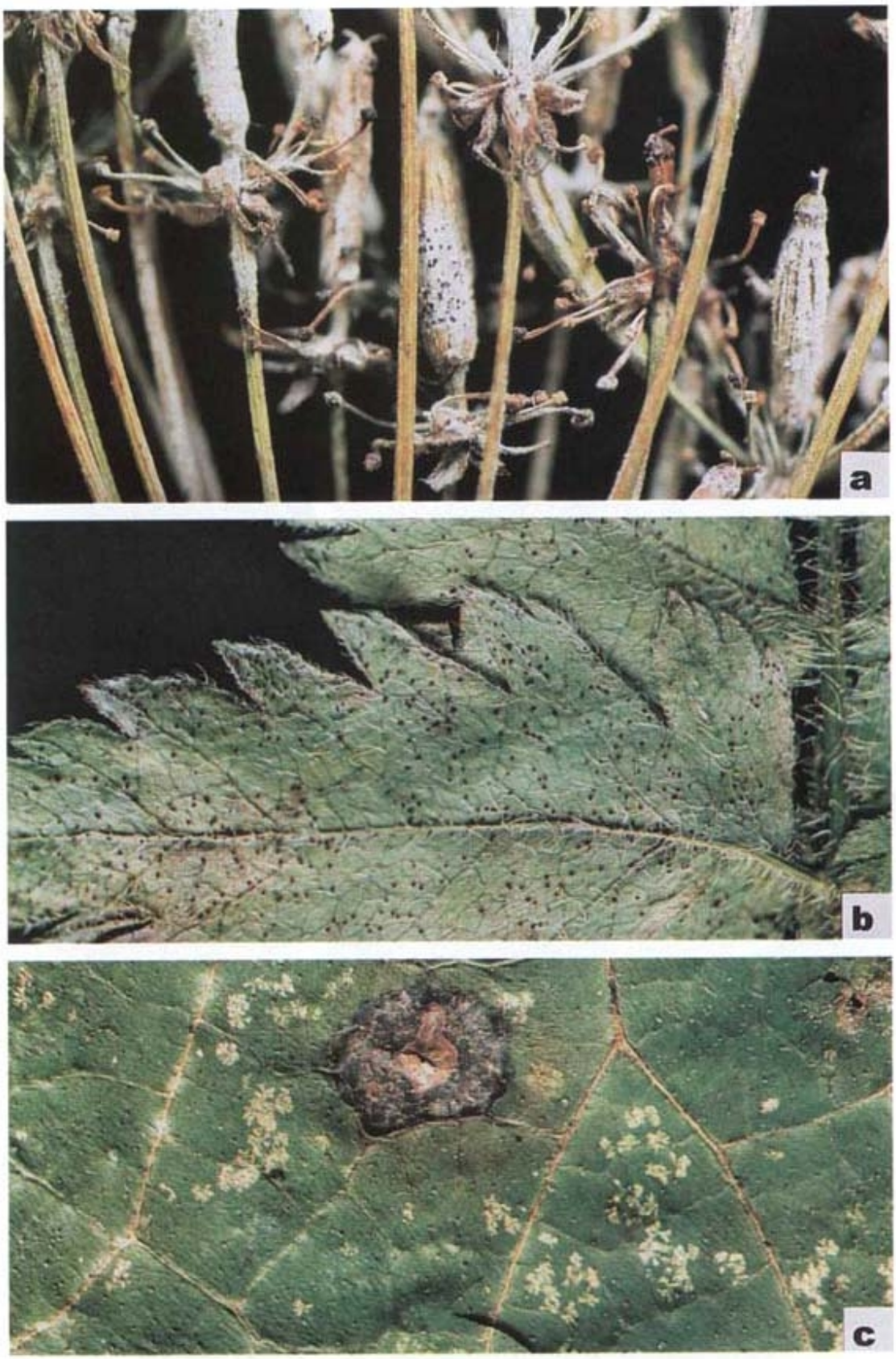

Fig. 1. a, b — *Erysiphe heraclei* DC. on *Chaerophyllum aureum* L.
c — *Phyllosticta telekiae* Cejp, Fassat. & Zavřel on *Telekia speciosa* (Schreb.) Baumg.

Fig. 2. a, b — *Phragmidium potentillae* (Pers.) Karst. on *Potentilla recta* L.
c — *Puccinia sessilis* Schneid. on *Dactylorhiza majalis* (Rchb.) P. F. Hunt. & Summerh.
d — *Sphaerotheca fusca* (Fr.) Blumer on *Doronicum austriacum* Jacq.

a meadow, 10 IX 1993. It is the third locality in Poland of *E. cichoracearum* var. *cichoracearum* on this host. So far it has been collected in Durne Bagno reserve in the Łęczna – Włodawa Lake District (M u ł e n k o 1988) and Brzeźo reserve near Chełm (R o m a s z e w s k a - S a ł a t a et al. 1986). In Europe, it is known from Norway, Romania and the former Soviet Union (B r a u n 1995).

Erysiphe cruciferarum Opiz ex Junell – on *Armoracia rusticana* P. Gaertn., B. Mey et Scherb.: Rymanów (FG 13 23), roadside, 24 IX 1994. On this host it was collected only in Warsaw (Służewiec) and at Łomianki near Warsaw (S a ł a t a 1985). In Europe, it is known in Bulgaria, Switzerland, France, Hungary, Italy, Romania, Finland, the former Soviet Union and former Yugoslavia (B r a u n 1995).

Erysiphe cynoglossi (Wallr.) U. Braun [= *E. asperifoliorum* Grev.] – on *Symphytum tuberosum* L.: Góra Chełm near Grybów (EG 17 32), beech forest, 27 VI 1994. On this host the fungus is known only from 5 localities in Poland: Duninowo near Gostyń, Łabunie near Zamość, Kraków, Mszana Dolna (S a ł a t a 1985) and the Strążyska valley in the Tatra Mts. (S a ł a t a et al. 1984). Besides, it was recorded in many European countries: Austria, Bulgaria, Switzerland, former Czechoslovakia, Germany, Spain, France, Great Britain, Romania, Sweden, former Yugoslavia, Hungary, the former Soviet Union, and the Ukraine (B r a u n 1995).

Erysiphe heraclei DC. [= *Erysiphe heraclei* DC. ex St.-Am.]

Whitish coating covers leaves, stems and fruits. Cylindrical conidia measuring: 23–25 × 9–12 µm are a little smaller than those given in literature [S a ł a t a 1985: 30–45 × 13–20 µm; B r a u n 1995: 25–45 (–50) × 12–21 µm]. Numerous cleistothecia: 91–126 µm in diameter, distributed regularly. Asci ellipsoidal or ovoid: 50–55 × 30–40 µm, 3–5 spored. Ascospores ellipsoidal: 11–12 × 20–25 µm – on *Chaerophyllum aureum* L. Nowy Łupków (FG 55 02), railway embankment, 14 VIII 1992 (Fig. 1 a, b). As yet this species has not been collected on this host in Poland. *Chaerophyllum aureum* occurs in western and southern Europe and in neighbouring regions as far as Caucasus and Iran (K o c z w a r a 1960). In Poland it was found only in the Beskid Niski Mts. (at ten localities) and not far from the locality Bnin near Poznań (O k l e j e w i c z 1999, 2001). *Erysiphe heraclei* on *Chaerophyllum aureum* is known from Austria, Bulgaria, Switzerland, former Czechoslovakia, Germany, Spain, France and Romania (B r a u n 1995).

Sphaerotheca aphanis (Wallr.) U. Braun var. aphanis [= *Sphaerotheca alchemillae* (Grev.) L. Junell]

Delicate, arachnoid coating on leaves. Conidia of euoidium type: 21–23 × 13–16 µm [S a ł a t a 1985: 24–36 × 12–22 µm; B r a u n 1995: 23–44 × 15–26 µm). Cleistothecia absent – on *Rubus perrohustus* H o l u b: Baryczka (Pogórze Dynowskie) (FF 83 14), 28 VII 1998. *R. perrohustus* is a species separated from *R. constrictus* P. J. Müll. & Lefévre

and described by Holub (1992). Its a new host for this species of fungus. This fungus occurs on various species of the genus *Rubus*, but in Poland and Europe was not recorded earlier on *Rubus constrictus* (S a ł a t a 1985, B r a u n 1995).

Sphaerotheca fugax Penz. et Sacc. – on *Geranium dissectum* L.: Rymanów (FG 13 23), potato cultivation, 9 VIII 1995. In Poland it was collected on this host only in Szczytna near Kłodzko (S a ł a t a 1985), whilst in Europe it is known from: Austria, Switzerland, former Czechoslovakia, Germany, France, Great Britain, Greece, Hungary, Italy, Netherlands, Portugal (including the Azores) Romania and Sweden (B r a u n 1995).

Sphaerotheca fusca (Fr.) Blumer

Arachnoid coating on leaves is composed of mycelium hyphae, conidiophores and conidia measuring: 21–23 × 14–15 µm [S a ł a t a 1985: 28–35 x 15–20 µm; B r a u n 1995: 24–45 (–50) × 14–20 (–26) µm]. Asci broad – ellipsoidal: 55–60 × 44–46 µm, 8-spored [S a ł a t a 1985: 60–90 × 45–80 µm; B r a u n 1995: 50–80 (–100) × 40–70 (–80) µm]. Ascospores roundish or broad – ellipsoidal: 12–14 × 11–12 µm [S a ł a t a 1985: 18–25 × 13–19 µm: B r a u n 1995: 13–20 (–24) × (11–) 12–16 (–18) µm] – on *Doronicum austriacum* Jacq.: Jasiel (FG 34 40), moor, 31 VII 1991 (Fig. 2 d). In Poland the fungus on this host is known only from the Nosal pass in the Tatra Mts. (S a ł a t a 1985), and in Europe from Austria, Switzerland, Germany, France, Italy, Romania, Sweden and the former Soviet Union (B r a u n 1995).

UREDINALES

Coleosporium tussilaginis (Pers.) Berk. – on *Telekia speciosa* (Schreb.) Baumg.: Stasiana (FG 22 44), riverside thicket, 20 VIII 1994. This is a new host for this fungus in Poland.

Phragmidium potentillae (Pers.) Karst. – on *Potentilla recta* L.: Nowa Wieś near Dukla (FG 22 12), meadow, 23 IX 1994 (Fig. 2 a, b). In Poland, on this host the fungus is known from two localities: the Pieniny Mts. and Łabunie near Zamość (M a j e w s k i 1977).

Puccinia sessilis Schneid. – on *Polygonatum odoratum* (Mill.) Druce: Zmysłówka near Rymanów (FG 13 14), beech forest, 12 VI 1994. This is a new host for this fungus in Poland. – on *Dactylorhiza majalis* (Rchb.) P. F. Hunt. et Summerh. [= *Orchis latifolia* L. p.p.]: Mszana (FG 22 20), wet forest margin, 23 V 1994 (Fig. 2 c). In Poland the fungus on this host is known only from 4 localities: Lipiny near Lubin (M a j e w s k i 1979), Samostrzel, Nakło and Anieliny (M i c h a l s k i 1982). – on *Phalaris arundinacea* L.: Rymanów (FG 13 23), drainoge ditch-side, 13 IX 1993. To the localities of this fungus known in Poland belong: Wrocław, Świecie on the Vistula river, surroudings of Legnica, Starożyn reserve in the Augustów Primaeval Forest, the Białowieża Primaeval Forest (M a j e w s k i 1979, M u ł e n k o 1996).

MITOSPORIC FUNGI

Ascochyta kleinii Bub. – on *Calystegia sepium* (L.) R. Br.: Rymanów (FG 13 23), drainage ditch – side, 21 IX 1994. In Poland, this fungus was collected only in the Białowodzka Góra reserve near Nowy Sącz (S a ł a t a et al. 1994).

Gyoerffyella oxalidis Vanev – on *Oxalis acetosella* L.: Zmysłówka near Rymanów, (FG 13 14), beech forest, 20 VI 1993. In Poland this fungus was recorded at 4 localities: Southern Roztocze, Białowieża (M u ł e n k o 1993), the Tatra Mts. (M u ł e n k o et al. 1995), Parkowe reserve in the planned Jurajski National Park near Częstochowa (R u s z k i e w i c z 2000).

Phyllosticta telekiae Cejp, Fassat et Zavřel

Roundish patches 3–8 mm in diameter, grey-black with a darker edge, lighter towards the middle. The diameter of pycnidia ranges from: (62–) 66–92 µm. Unicellular, ellipsoidal conidia measuring: 4.5–7 × 2–2.5 µm – on *Telekia speciosa* (Schreb.) Baumg.: Stasiana (FG 22 44), river-side bush margin, 20 VIII 1994 (Fig. 1 c). This is a new species for Poland.

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Nowe i rzadkie gatunki grzybów pasożytniczych w Polsce

Streszczenie

Praca przedstawia charakterystykę 14 gatunków mikroskopijnych grzybów fitopatogenicznych zebranych w południowej Polsce (Beskid Niski i Doły Jasielsko-Sanockie). Są wśród nich przedstawiciele *Erysiphales*, *Uredinales* i grzybów mitosporowych (*Deuteromycotina*). *Phyllosticta telekiae* jest gatunkiem nowym dla Polski, *Erysiphe aquilegiae* var. *ranunculi* na *Aconitum lasiocarpum* i *Sphaerotheca aphanis* var. *aphanis* na *Rubus perrobustus* nie były dotąd notowane w Polsce i Europie na tych żywicielach. Trzy gatunki zebrano na roślinach żywicielskich, na których nie znaleziono ich wcześniej w naszym kraju, natomiast pozostałe grzyby znane są z niewielu stanowisk. W przypadku stwierdzenia różnic między opisem zebranych pasożytów w dostępnych monografiach, a materiałem zielnikowym, zamieszczono dane o ich morfologii.