

Peronospora arthurii – a new species for Poland

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Peronospora arthurii Farl. was found on the leaves of *Oenothera biennis* L. as a new species in Polish flora of fungi. Its description, illustration and distribution are given.

Key words: *Peronosporales*, fungi, parasite, taxonomy, ecology, distribution, Poland.

INTRODUCTION

Peronospora arthurii Farlow (*Peronosporales*, Oomycota) is a parasite fungus affecting members of the genera: *Clarkia*, *Epilobium*, *Gaura*, *Oenothera* and *Onagra* of the *Onagraceae* family. This fungus is known largely in the USA, where it was found on species belonging to all the genera mentioned above. Its presence was recorded at 24 localities in 15 states (Farr et al. 1989). It is also found in Palestine and Morocco on representatives of the *Clarkia* genus and in Germany on *Oenothera biennis* (Kochman, Majewski 1970).

In Poland, *Peronospora arthurii* was found on *Oenothera biennis*. On this plant the fungus was collected for the first time in Chęciny near Kielce in 1996. In 1997 it was recorded at several localities in the Sandomierz region and in Zaklików near Janów Lubelski. At present it occurs at 6 localities grouped in south-east Poland (Fig. 1).

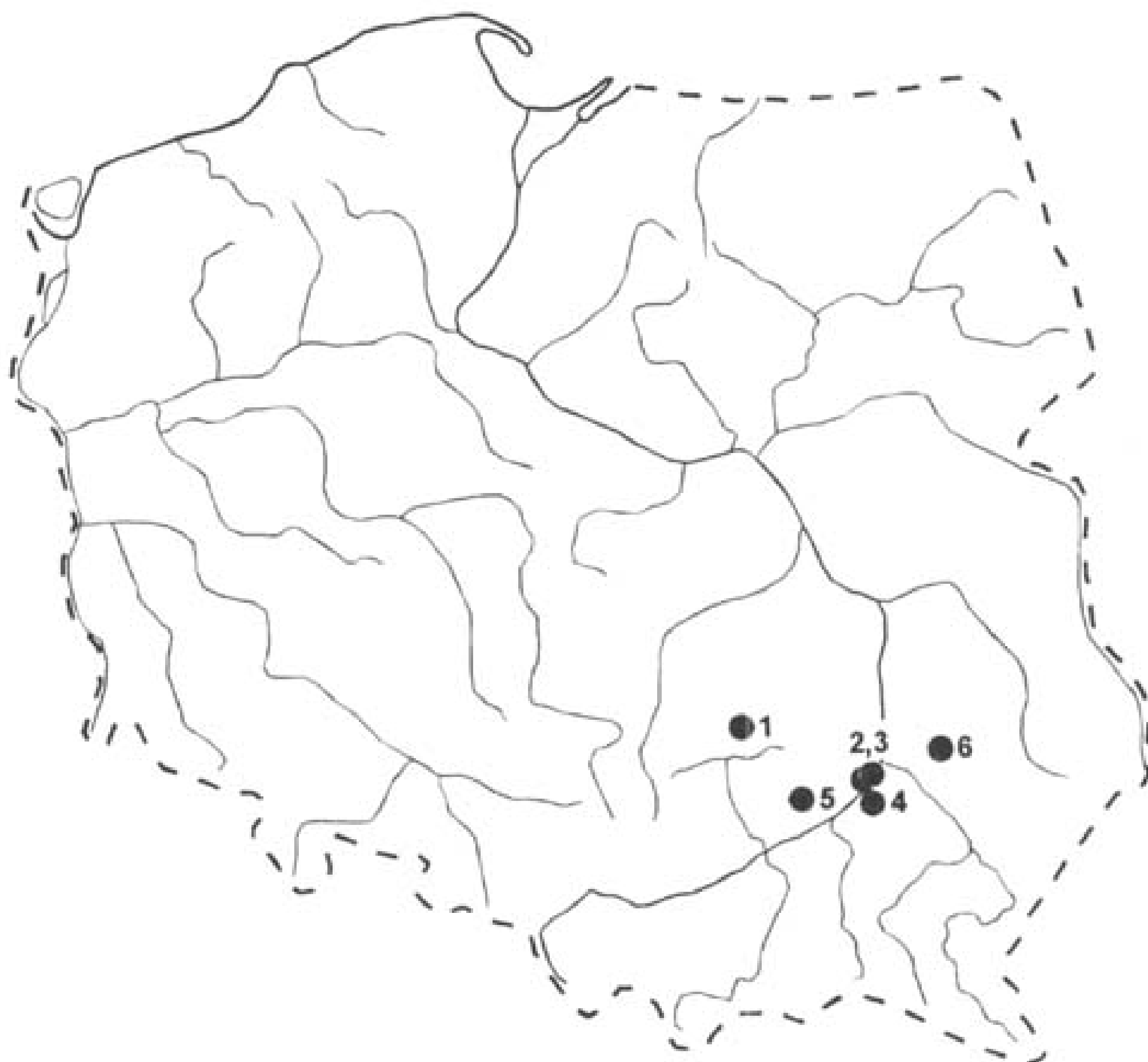


Fig. 1. Sampling sites of *Peronospora arthurii* in Poland

1 – Chęciny n. Kielce, 2 – Sandomierz, 3 – Kamień Łukawski n. Sandomierz, 4 – Tarnobrzeg,
5 – Staszów, 6 – Zaklików n. Janów Lubelski

DESCRIPTION OF THE FUNGUS

Peronospora arthurii Farlow, Bot. Baz. 8: 315, 1883

Violet-grey, loose deposit of conidiophores and conidia is found on the underside of leaves coating larger or smaller areas limited by nerves (Fig. 2). When strongly affected, its mycelium covers the whole leaf surface, causing symptoms similar to systemic infection. Relatively distinct, light yellow spots occur on the overside of leaves.

Conidiophores measuring (150–) 210–510 (–630) × 6–7.5 μm, branched 3–6-times, have an unthickened base. The branched part of conidiophores is 1/4 to 1/3 of their total height. The main branches are bent, the terminal branches are beaklike or forked, arranged rectangularly, rarely at an acute or obtuse angle, up to 24 μm in length.

Broad-elliptic or egg-shaped sporangia, rounded at both ends, measure (13.5–) 21–30 (–31) × (13.5–) 16.5–21 (–24) μm. Oogonia were not observed (Fig. 2).

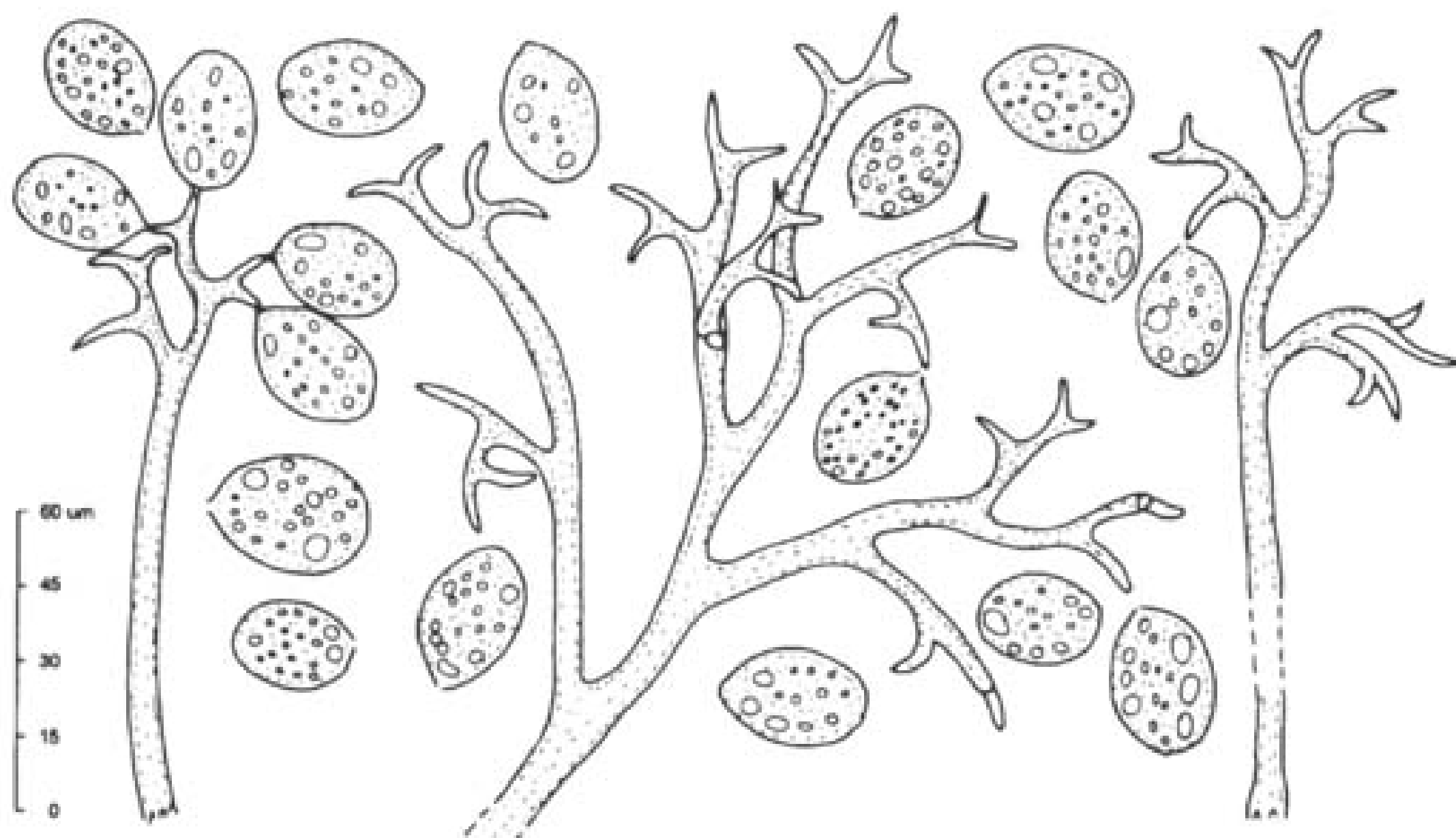


Fig. 2. Conidiophores and conidia of *Peronospora arthurii* collected on *Oenothera biennis* L. in Poland

Material examined. Poland: – Chęciny near Kielce, sample collection on roadside (10 July 1996), leg. W. Muleńko; – Sandomierz (14 June 1997), Tarnobrzeg (21 June 1997), Staszów (27 July 1997), sample collections on roadsides, Kamień Łukawski near Sandomierz (4 July 1997), common on the south slope of Pieprzowe Mts., leg. E. Matejko Gosztyła and B. Sałata; – Zaklików near Janów Lubelski (31 July 1997), sample collection on roadside, leg. B. Sałata. Herbarial materials were deposited in the Herbarium of Department of General Botany, Maria Curie-Skłodowska University in Lublin.

REFERENCES

- Farr D. F., Bills G. F., Chamuris G. P., Rossman A. Y. 1989. Fungi on plants and plant products in the United States. APS Press.
- Kochman J., Majewski T. 1970. Flora Polska. Grzyby (*Mycota*), 4: *Phycomycetes, Peronosporales*. PWN, Warszawa.

Peronospora arthurii – nowy gatunek dla Polski

Streszczenie

Peronospora arthurii jest grzybem pasożytniczym porażającym przedstawicieli rodziny *Onagraceae*, a zwłaszcza rodzaju *Oenothera*. Grzyb ten znany był dotychczas z USA, Palestyny, Maroka i Niemiec. W Polsce po raz pierwszy zebrany został w roku 1996 w Chęcinach koło Kielc. Obecnie znany jest z sześciu stanowisk zaznaczonych na mapie (Fig. 1).