

NOTES ON POLISH POLYPORES. 2. *OXYPORUS LATEMARGINATUS*

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Abstract: *Oxyporus latemarginatus* (E. J. Durand & Mont.) Donk is described, illustrated and discussed, based on the first collections from Poland. A key to the Polish representatives of *Oxyporus* (Bourdot & Galzin) Donk and the closely related genera *Physisporinus* P. Karst. and *Rigidoporus* Murrill is provided.

Key words: *Oxyporus*, *Physisporinus*, *Rigidoporus*, taxonomy, ecology, distribution, Poland

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Oxyporus latemarginatus (E. J. Durand & Mont.) Donk is a polypore long searched for from 1995 until 2001, when some well-developed basidiomes were collected in southern Poland. Further specimens were discovered in the Stanisław Domański herbarium housed in KRAM. These specimens date from 1976 but were never published by Domański or anyone else.

The distribution of *Oxyporus latemarginatus* includes southern and central parts of Europe. In their map, Ryvarden and Gilbertson (1994) reported the species from Poland also. Unfortunately no references are given for this information and no specimens are cited in the book. In the available literature this is the only one note on the occurrence of *O. latemarginatus* in the country. The two localities published here are the first fully documented records of *O. latemarginatus* in Poland.

Oxyporus latemarginatus (E. J. Durand & Mont.)
Donk Fig. 1.

Persoonia 4: 342. 1966.

Polyporus latemarginatus E. J. Durand & Mont., Syll. Crypt.: 163. 1856. – *Rigidoporus latemarginatus* (E. J. Durand & Mont.) Pouzar, Folia Geobot. Phytotax. 1(4): 368. 1966. – *Poria ambigua* Bres., Atti Acad. Sci., Lett., Art. Agiati Rovereto III, 3: 84. 1897. – *Chaetoporus ambiguus* (Bres.) Bondartsev & Singer, Ann. Mycol. 39: 51. 1941.

Basidiomes annual, resupinate, rather robust and widely effused on the wood, sometimes forming false nodular pilei, especially on vertical substrate; consistency soft and watery in fresh specimens, becoming corky and brittle when dried; margin sterile next to hymenophore, fimbriate, up to 1 mm wide; pore surface white in fresh conditions, then becoming white to cream colored, covered by brownish gelatinous matter when dried; pores very angular, 1–3 per mm, often lacerate and in some specimens irpicoid; context white, azonate, soft-fibrous, up to 2 mm thick; tube layer concolorous with context, up to 10 mm long. Hyphal system monomitic, hyphae hyaline, thin-walled, moderately branched, simple-septate, strongly intermixed, 4–8 μm wide; cystidia rare to frequent, narrowly clavate or cylindrical, with encrustation on apex, simple-septate at base, 20–25 \times 5–6 μm ; basidia clavate, with 4 sterigmata, basally simple-septate, 15–20 \times 5–7 μm ; basidiospores narrowly ellipsoid, hyaline, smooth, non-amyloid, 5.5–7.0 \times 3.0–4.0 μm .

SPECIMENS EXAMINED. POLAND. POJEZIERZA POŁUDNIOWOBAŁTYCKIE LAKELANDS. Pojezierze Łagowskie lakeland: near Łagów Lubuski, on fallen trunk of *Fagus sylvatica*, 15 Aug. 1976, leg. S. Domański (KRAM-Domański 7279, 7279 duplicates); KOTLINA SANDOMIERSKA BASIN. Płaskowyż Tarnowski plateau: Tarnów, at Tarnowskich St. near J. Tuwima St., road-

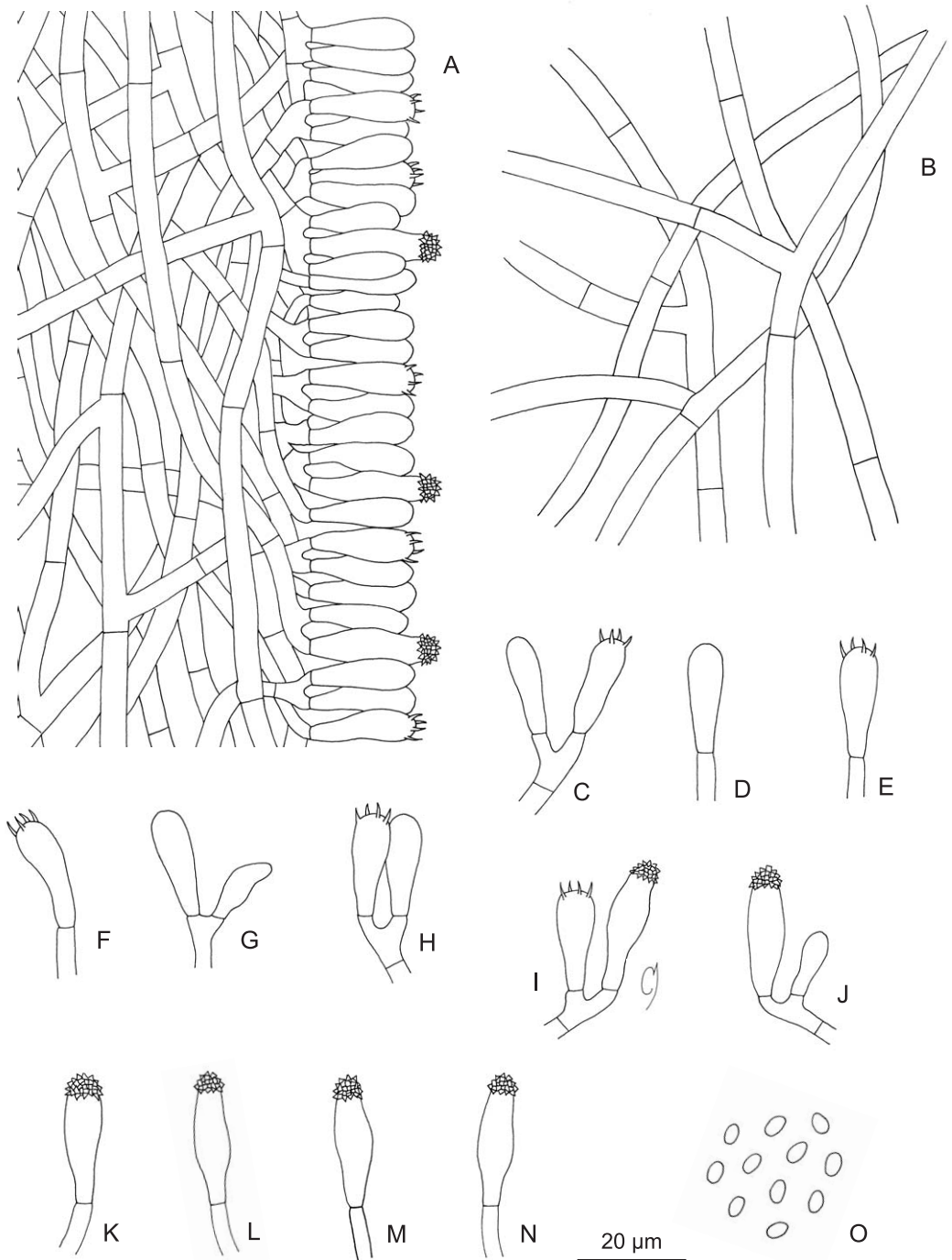


Fig. 1. *Oxyporus latemarginatus* (J. E. Durand & Mont.) Donk: A – hymenium, B – hyphae, C–H – basidia, I – basidium + cystidium, J–N – cystidia, O – basidiospores (drawn by Jolanta Cabala from KRAM F-51984).

side, dead stump of deciduous tree, 12 Oct. 2001, leg. M. Piątek (KRAM F-51984).

ADDITIONAL SPECIMENS SEEN. CZECH REPUBLIC. MORAVIA: Jihlava, alt. 520 m, *Tilia* sp. – basis arboris, 27 June 1988, leg. P. Vampola (KRAM F-33262); FRANCE. In vicinities of Paris, 1936, leg. Joachim (KRAM-Domański 4243); GERMANY. MECKLEMBURG: Sonnenberg bei Parchim, ad lignum Fagi silvaticae, Oct. 1966, leg. R. Doll (KRAM-Domański 5428); HUNGARY. Pr. vicum Asványráró (com. Győr-Sopron), in territorio inundationis Danubii, in populeto, ad trunco putrido Populi, 24 Sept. 1960, leg. Igmándy (KRAM-Domański 1534).

TAXONOMY AND IDENTIFICATION. In general view, *Oxyporus latemarginatus* is characterized by resupinate, often nodular basidiomes covered by brownish gelatinous matter in dry conditions. Macroscopically it is very similar to *Oxyporus corticola* (Fr.) Ryvarden, which, however, has often pileate basidiomes without gelatinous matter on the surface of the hymenophore. Under the microscope *O. latemarginatus* is immediately distinguished from *O. corticola* by the presence of only one type of cystidia and by the size and shape of the basidiospores, which are narrowly ellipsoid and always single. In contrast, *Oxyporus corticola* has ovoid basidiospores often glued in groups of 2–4, and gloecystidia in addition to encrusted cystidia typical for the genus *Oxyporus* (Bourdot & Galzin) Donk. The remaining European species of the genus have smaller basidiospores, usually less than 5 µm long.

ECOLOGY. *Oxyporus latemarginatus* is a typical wood-inhabiting fungus, although there are reports of its occurrence on the ground (Kotlaba & Pouzar 1988 – holotype of Pilát's *Leptoporus wernerii* Pilát) and on the herb *Ophiopogon* Ker Gawl. belonging to the Liliaceae family (Ryvarden & Gilbertson 1994). It occurs on various deciduous trees, and more rarely on conifers, in the wood of which it causes white rot. Gilbertson and Ryvarden (1987) and Ryvarden and Gilbertson (1994) gave a long list of host plants, so it is not repeated here. Recently this list was supplemented by Kotlaba (1997), who added such unusual hosts as *Celtis occidentalis* L. and *Gleditsia triacanthos* L.

Robinia pseudoacacia L. is the most common host in former Czechoslovakia: 21% of all records of *O. latemarginatus* are on this tree; on other hosts it occurs singly (Kotlaba 1984). In Poland the polypore has been observed on a fallen branch of *Fagus sylvatica* L. and on a dead stump of a deciduous tree. The main substrate of *Oxyporus latemarginatus* is dead wood, but it may be found on living trees, where its basidiomes emerge from the tree base up to a few meters above the ground. This polypore occurs in various habitats: in natural forests, and in places changed by human activity such as parks, tree stands or even single groups of trees and avenues. Some authors underline its constant occurrence in moist forests connected with river valleys or in the close vicinity of streams or rivers (Kotlaba 1984; Tortić & Kotlaba 1976). In Tarnów it emerged at a roadside on a dead stump surrounded by herbs and dense grasses which were overgrowing the basidiomes. This locality showed no relation with any water reservoirs or rivers. The details of the ecology at the locality near Łągów Lubuski are unknown.

DISTRIBUTION. *Oxyporus latemarginatus* is distributed in warm temperate, subtropical and tropical regions of the Northern and Southern Hemispheres, although its distribution is best known in the Holarctic area. It is an uncommon species over its whole geographical range, perhaps more frequent in regions with warmer climate. In North America it is known from western and eastern parts of Canada, the U.S.A. including Hawaii (Gilbertson & Ryvarden 1987; Gilbertson *et al.* 2002), Costa Rica (Carranza-Morse 1992), in South America it is known from Paraguay (Popoff & Wright 1998), Jamaica (Ryvarden 2000) and Brazil (Góes-Neto 1999).

Oxyporus latemarginatus is well known and documented in Eurasia. In Europe it is known from almost all countries in the Mediterranean, western and central parts of the continent, but absent in Fennoscandia (Ryvarden & Gilbertson 1994; Hansen & Knudsen 1997). In Europe it apparently has rather a submediterranean type of distribution, and is present in Austria, Belarus, Belgium, Bulgaria, Croatia, the Czech Republic,

England, Estonia, France, Germany, Italy, Latvia, Lithuania, the Netherlands, Poland, Portugal, Romania, Russia, Slovakia, Spain, Switzerland, Ukraine and former Yugoslavia (Bernicchia 1990, 2001; Bontea 1985; Järva & Parmasto 1980; Jülich 1984; Kotlaba 1984, 1997; Kreisel 1987; Krieglsteiner 1991; Lizoň & Bacigálová 1998; Ryvar den & Gilbertson 1994; Tortić & Kotlaba 1976; Vampola 1989). The fungus is rarer in the north; for example in the Czech Republic and Slovakia there are only scattered centers of localities in the warmer southern regions of Moravia and Slovakia (Kotlaba 1984) and the species is completely absent in northern parts of these two countries. The Polish locality in Tarnów is far from the nearest localities in Slovakia, and the locality near Łagów Lubuski is even farther north (Fig. 2). The former site is in the region with highest mean annual temperature in Poland, and the latter site in a region with a warm temperate climate.

In Asia it is widely distributed but scattered, present in Russian Siberia, from where it was described by Albert Pilát under three different names: *Leptoporus zilingianus* Pilát, *Poria reticulato-marginata* Pilát and *Poria consobrinoides* Pilát (Kotlaba & Pouzar 1988). It is known in Kazakhstan, Pakistan (Kotlaba 1984), China (Dai

2000), Japan, Thailand (Núñez & Ryvar den 2001) and northern Iran (Hallenberg 1981).

The world distribution of *Oxyporus latemarginatus* is supplemented by localities in Africa: Morocco (Kotlaba & Pouzar 1988), Kenya, Tanzania and Uganda (Ryvar den & Johansen 1980).

KEY TO POLISH SPECIES OF *OXYPORUS*, *PHYSISPORINUS* AND *RIGIDOPORUS*

Oxyporus (Bourdot & Galzin) Donk, *Physisporinus* P. Karst. and *Rigidoporus* Murrill are closely related genera; the generic limits are difficult to define. Species in this complex should be identified using a cumulative key for all taxa. Such a key is prepared here for Polish representatives. All these species are rare or very rare in Poland. *Oxyporus* is represented by four species, and *Physisporinus* and *Rigidoporus* by two species each (Wojewoda 1999).

1. Basidiomes white, discoloring to red or brown when touched, cystidia absent 2
- 1* Basidiomes white, ochraceous, isabelline or pinkish brown, not discoloring when touched, encrusted cystidia present (with the exception of *Rigidoporus crocatus*, which has no cystidia) 3
 2. Basidiomes rather small, white, immediately discoloring to red when touched, basidiospores ovoid or subglobose, $4.0\text{--}6.5 \times 3.0\text{--}5.5 \mu\text{m}$ *Physisporinus sanguinolentus* (Alb. & Schwein.: Fr.) Pilát
 - 2* Basidiomes large, robust, white, but discoloring to brown when bruised, basidiospores subglobose to globose, $4.0\text{--}5.5 \times 3.5\text{--}4.5 \mu\text{m}$ *Physisporinus vitreus* (Pers.: Fr.) P. Karst.
3. Basidiomes white, sometimes ochraceous when dried 4
- 3* Basidiomes isabelline or pinkish brown 7
 4. Basidiomes annual, resupinate or effused-reflexed, basidiospores ellipsoid or ovoid, cystidia capitately or entirely encrusted 5
 - 4* Basidiomes perennial, usually pileate but sometimes resupinate, upper surface often covered by mosses, basidiospores globose, $3.0\text{--}4.0 \times 2.5\text{--}4.0 \mu\text{m}$, cystidia capitately to entirely encrusted *Oxyporus populinus* (Schumach.: Fr.) Donk

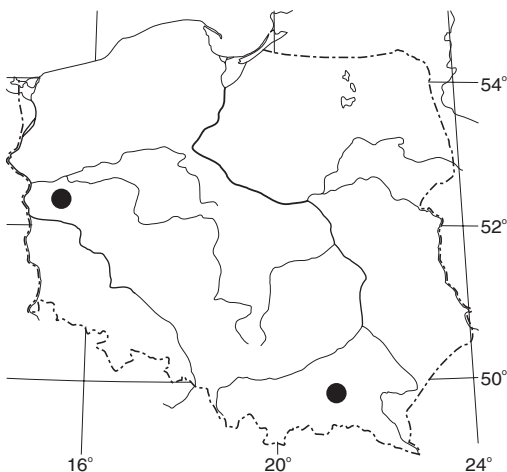


Fig. 2. Distribution of *Oxyporus latemarginatus* (J. E. Durand & Mont.) Donk in Poland.

5. Imperfect stage absent, cystidia apically encrusted, basidiospores 5–9 µm long 6
- 5* Imperfect stage usually present, chlamydospores ellipsoid to globose, 7–15 × 6–10 µm, cystidia entirely encrusted, basidiospores broadly ellipsoid, 3.0–4.5 × 2.5–3.5 µm *Oxyporus obducens* (Pers.) Donk
6. Cystidia of two types: apically encrusted cystidia and non-encrusted gloeocystidia, basidiospores broadly ellipsoid to ovoid, 5.0–6.0 × 3.5–4.5 µm, often glued in groups of 2–4, basidiomes resupinate or with small reflexed pilei
. *Oxyporus corticola* (Fr.) Ryvarden
- 6* Cystidia of one type: apically encrusted cystidia, basidiospores narrowly ellipsoid, always single, 5.5–7.0 × 3.0–4.0 µm, basidiomes resupinate or with false nodular pilei
. *Oxyporus latemarginatus* (E. J. Durand & Mont.) Donk
7. Basidiomes pinkish brown, stratified, cystidia absent, basidiospores subglobose, 3.5–5.5 × 3.5–5.0 µm
. *Rigidoporus crocatus* (Pat.) Ryvarden
- 7* Basidiomes isabelline, not stratified, apically encrusted cystidia present, basidiospores globose, 5.0–5.5 × 5.0–5.5 µm
. *Rigidoporus undatus* (Pers.: Fr.) Donk

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