

Key to species of *Hohenbuehelia* with dimidiate fruiting bodies from western Europe and north-eastern North America

1. Metuloid cystidia lacking in hymenium; pileipellis hyphae with amorphous-globular incrustation and sometimes with fine tapering spines each tipped with a droplet; spores globose or ellipsoid . . . *Resupinatus* (not included here)
1. Hymenial metuloid cystidia present, either projecting and visible as a frosting under a hand lens or immersed and only visible in microscopic section 2
2. Pileus reaching 6 cm, dimidiate-orbicular, pearl grey and covered with a deep tomentum that forms a reticulate pattern of spines. — Ontario and Quebec, south to Costa Rica, Europe *H. mastrucata*
2. Pileus smaller, or tomentum not forming a reticulum. 3
3. Pileus usually 2 cm or more broad 4
3. Pileus usually less than 1.5 cm broad 6
4. Pileipellis with pileogloeosphexes; pileus whitish to grey, pale beige, honey brown, dark brown, sometimes olive brown; spores 6.4–8.0 × 3.7–4.5 µm. — Europe, Asia. *H. atrocoerulea*
4. Pileipellis without pileogloeosphexes; pileus off-white, pale beige to honey brown 5
5. Pileus pale beige to honey brown with paler margins, with pale to buffy tomentum toward base; spores 6.6–8.1 × 3.4–4.4 µm. — North America, south to Costa Rica, Europe *H. grisea*
5. Pileus off-white, with at most fine white tomentum towards base; spores 7.0–8.2 × 3.1–3.7 µm. — Costa Rica *H. carlothornii*
6. Lamellae white to cream or off-white when mature 7
6. Lamellae darker initially or in development 12
7. Pileus cupulate, grey-brown to black; lamellae few and distant, pure white; spores allantoid, 7.2–9.3 × 3.1–4.3 µm. — Ontario, Michigan and New York, Europe *H. cyphelliformis*
7. Pileus dimidiate; lamellae moderately close 8
8. Pileus pale, straw-coloured to pearl grey. 9
8. Pileus darker, blue-grey to black 10
9. Pileus straw-coloured or pale beige; basidia usually 4-spored; spores 6.6–8.1 × 3.4–4.4 µm; small forms previously known as *H. approximans* *H. grisea*
9. Pileus pearly grey with deep, translucent gelatinous zone; basidia 2-spored, with clamps; spores 8.1–9.9 × 3.8–4.8 µm. — Newfoundland (Thorn 2014) and Europe. *H. fluxilis**
10. Pileus blue-grey, with whitish to concolourous tomentum toward base; on wood of deciduous trees; spores 6.4–8.0 × 3.7–4.5 µm. — Europe, Asia *H. atrocoerulea*
10. Pileus deep brown to black; on wood of conifers (rarely deciduous) trees 11
11. Pileus glossy black, with fine white tomentum towards base; spores 7.5–8.8 × 4.7–5.6 µm. — Ontario *H. algonquinensis*
11. Pileus brown to black, finely frosted or with greyish tomentum towards base; spores 6.9–8.0 × 3.6–4.2 µm. — Alberta and Ontario *H. canadensis*

12. Metuloids immersed; pileus cupulate and remaining so 13
12. Metuloids projecting; pileus cupulate to dimidiate 14
13. Pileus grey-brown to blackish with silvery tomentum; usually on hardwood branches; spores 6.3–7.9 × 3.4–4.5 µm. — Boreal North America and Europe . . . *H. unguicularis*
13. Pileus jet black, glossy, with at most scattered fine white wisps; on branches of conifers; spores 6.8–8.6 × 3.1–3.9 µm. — Boreal North America and Europe *H. pinacearum*
14. On wood of conifers; pileus blackish with pebbly surface and coarse yellowish to black tomentum towards base; spores 7.4–9.1 × 4.0–5.2 µm. — Alberta and Finland *H. mustialensis*
14. On wood of deciduous trees; pileus less coarsely tomentose 15
15. Both pileus and lamellae black; metuloid cystidia trilayered, with dark brown middle layer as seen in the microscope; spores 6.2–7.7 × 3.7–4.4 µm. — Yukon to Costa Rica, Europe *Resupinatus niger*
15. Pileus dark greyish brown, finely white-tomentose towards base; lamellae at first creamy white then greyish brown; spores 6–8 × 3.2–4.4 µm. — Ontario and Wyoming *H. nimueae*

Acknowledgements We thank the curators of AMB, AQUI, ARAN, CFMR, DAOM, FH, MCVE, WU, Z+ZT, and Pierre Roux (Sainte-Sigolène, France) for the loan of specimens for our study, Pablo Alvarado for assistance with molecular analyses, Barbara Thiers (NY) for digital access to the isotype of *Pleurotus approximans* (<http://sweetgum.nybg.org/science/vh/>) and Jordan K. Teisher (PH), for the loan of and the information about the collection of *Agaricus niger*. The Department of Biology and Faculty of Science, University of Western Ontario provided financial support for RGT, who also thanks Jennifer V. McDonald and undergraduate research assistants at UWO for sequencing of some samples. Research by RGT in Costa Rica was supported by a grant from the U.S. National Science Foundation (NSF DEB-0072756 to RGT and G.K. Brown, University of Wyoming); we thank the National Biodiversity Institute (INBio) for assistance with logistics and obtaining collecting permits and the late Luis Diego Gomez and the Organization for Tropical Studies for assistance and accommodations at Las Cruces Biological Station (Wilson Botanical Garden).

REFERENCES

- Albertó E, Fazio A, Wright JE. 1998. Reevaluation of *Hohenbuehelia nigra* and species with close affinities. *Mycologia* 90: 142–150.
- Alvarado P, Manjón JL, Matheny PB, et al. 2010. Tubariomyces, a new genus of Inocybaceae from the Mediterranean region. *Mycologia* 102 (6): 1389–1397.
- Alvarado P, Moreno G, Manjón JL. 2012. Comparison between *Tuber gnadidii* and *T. oligospermum* lineages reveals the existence of the new species *T. cistophilum* (Tuberaceae, Pezizales). *Mycologia* 104 (4): 894–910.
- Angeli P, Contu M. 2008. *Hohenbuehelia latalis* sp. nov., una nuova specie resupinata dal Parco Presidenziale di Castelporziano (Lazio, Italia). *Mycologia e Vegetazione Mediterranea* 22 (2): 119–129.
- Barron GL. 1977. The nematode-destroying fungi. Canadian Biological Publications, Guelph, Ontario.
- Barron GL, Thorn RG. 1987. Destruction of nematodes by species of *Pleurotus*. *Canadian Journal of Botany* 64: 774–778.
- Berkeley MJ, Curtis MA. 1856. A commentary on the Synopsis fungorum in America boreali media degentium, by L.D. de Schweinitz. *Journal of the Academy of Natural Sciences, Philadelphia* II, 3: 205–224.
- Christiansen MP. 1959. Two new Danish *Pleurotus* forms: *Pleurotus atrocaeruleus* Fr. and *P. myxotrichus* Lévl. var. *bisporus* var. nov. *Friesia* 6: 7–10.
- Cléménçon H. 1972. Zwei verbesserte Präparierlösungen für die mikroskopische Untersuchung von Pilzen. *Zeitschrift für Pilzkunde* 38: 49–53.
- Coker WC. 1944. The smaller species of *Pleurotus* in North Carolina. *Journal of the Elisha Mitchell Scientific Society* 60: 71–95, pl. 47–52.
- Consiglio G. 2016. Nomenclatural novelties. *Index Fungorum* 292: 1–2.
- Consiglio G. 2017a. Nomenclatural novelties. *Index Fungorum* 325: 1.
- Consiglio G. 2017b. Nomenclatural novelties. *Index Fungorum* 326: 1.
- Consiglio G. 2017c. Nomenclatural novelties. *Index Fungorum* 327: 1.

* Mycoportal (mycoportal.org) shows collections under this name from Nova Scotia and Ontario in Canada and Florida and South Carolina in USA, but several appear conspecific with 2-spored forms of *H. grisea* such as RGT 840713/01 (Fig. 1; Thorn & Barron 1986).