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Nomenclatural novelties : Julien Koga and R. Greg Thorn

*Heridium asiaticum* Koga & Thorn, sp. nov.

IF 900122

Holotype: TMI 8380

Etymology (Latin): of Asia.

Diagnosis: Fruiting body ovate to globose, 5–10 cm wide, white at first, yellowing with age and becoming brown when dried, the upper surface roughened-hispid, the lower surface composed of spines 1–5 cm long, 1–2 mm wide at their base and tapering to needle tips, with solid, spongy white flesh. Gloeocystidia present, up to 7.5 µm wide. Basidiospores subglobose, smooth, amyloid, 6.5–7.5 × 5.0–5.5 µm.

Ecology and distribution: On *Castanea*, *Castanopsis*, *Fagus*, and *Quercus*, causing a white rot, China and Japan (Teng, Chung-kuo ti Chen-chun, 1963; Imazeki et al., *Nihon no Kinoko*, 1988; Imazeki and Hongo, *Colored Illustrations of Mushrooms of Japan*, vol. II, 1989).

Specimens examined: on fallen hardwood log, Horoiwayama, Saroma-cho, Tokoro-gun, Hokkaido, Japan, 27 Sept. 1984, I. Ohira, N. Maekawa & E. Nagasawa, TMI 8380. A culture derived from this collection (TMI 30293) was sent to Ottawa for study by J.H. Ginns and is maintained there as DAOMC 195739.

Comments: We are not aware of any characters of macro- or micromorphology that differentiate the members of the *Heridium erinaceus* species complex, which includes *H. erinaceus* s.str., *H. asiaticum*, and *H. carolinense*. To our knowledge, there are no studies of mating intercompatibility that have included strains from Asia with strains from Europe or North America. Nonetheless, since sequences (ITS, LSU, Tef1, and RPB2) from the three geographic regions form mutually monophyletic clades, we feel that it is worthwhile distinguishing the three entities at the species level to allow precise designation of the subjects of study by mushroom cultivators, biochemists, and medical researchers. Only ITS sequences are available for *Heridium rajendrae* U. Singh & K. Das (*Nova Hedwigia* 108: 509. 2019), described from a living tree of *Quercus* in Uttarakhand state in northern India, and these place it in the *H. erinaceus* complex but separate from *H. erinaceus* s.str., *H. asiaticum*, and *H. carolinense* (data not shown). Multilocus sequence data from type or authentic material of *H. rajendrae* are desirable to better place this species.

*Heridium carolinense* Koga & Thorn, sp. nov.

IF 900123

Holotype: VPI F-0001744

Etymology (Latin): of the Carolinian zone, or southern deciduous forest region of eastern North America.

Diagnosis: Fruiting body ovate to globose, sometimes lobed, up to 25 cm broad, white at first, then yellowing in age and browning when dry, the upper surface a coarsely matted tangle of mycelial strands, the lower portion composed of spines up to 4 cm long, tapering to needle tips, with soft, solid to porous white flesh. Gloeocystidia arising in subhymenium, up to 7 µm broad. Basidiospores subglobose, amyloid, smooth to finely roughened, 5.5–7.0 × 4.5–5.5 µm.

Specimens examined: on *Quercus* in oak stand on Laurel-Bowie Road, Laurel, Maryland, USA, 21 Nov. 1965, John Lindsay, O.K. Miller 3766, VPI F-0001744. A culture derived from this collection (OKM 3766-S) was sent to Ottawa for study by J.H. Ginns and is maintained there as DAOMC 251033.

Ecology and distribution: Usually growing from cracks or knot holes in living trees, recorded on *Quercus*, *Fagus*, *Platanus*, and *Acer*, in eastern USA and possibly southern Ontario in Canada (Harrison, *Mich. Bot.* 12: 177-194, 1973).

Comments: We are not aware of any characters of macromorphology or micromorphology that differentiate the members of the *H. erinaceus* species complex, which includes *H. erinaceus* s.str., *H. asiaticum*, and *H. carolinense*, and Ginns (*Can. J. Bot.* 63: 1551-1563, 1985) showed mating intercompatibility between isolates from Europe (*H. erinaceus* s.str.) and eastern North America (*H. carolinense*). However, since sequences (ITS, LSU, Tef1, and RPB2) from the three geographic regions form mutually monophyletic clades, we feel that it is worthwhile recognizing these three entities at the species level. Neither Harrison (op. cit.) nor Ginns (op. cit.) knew of any confirmed records of this species from Canada. Some recent observations from southern Ontario posted to iNaturalist.ca appear plausible, but there are none substantiated with a specimen or by DNA sequence data. There are no cultures or publicly available sequence data of collections from western North America (Arora, *Mushrooms Demystified*, 1986; Desjardin et al., *California Mushrooms*, 2015; Siegel and Schwarz, *Mushrooms of the Redwood Coast*, 2016; MacKinnon and Luther, *Mushrooms of British Columbia*, 2021), including recent plausible observations on iNaturalist from southern British Columbia. Vouchers and sequence data are needed to ascertain the identity of these western populations.