

IUMS2017-1945 MORPHOLOGICAL CONFIRMATION OF PROBASIDIUM FOR *LAUROBASIDIUM HACHIOJENSE* COMB. NOV. PROPOSED BY THE MOLECULAR ANALYSIS

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Laurobasidium lauri (Julich, 1982)

≡ *Exobasidium lauri* Geyler (Geyler, 1874) Reasons: its constant clamps in the hyphae, large galls and the different host family (*Laurus azonica* and *L. nobilis*)

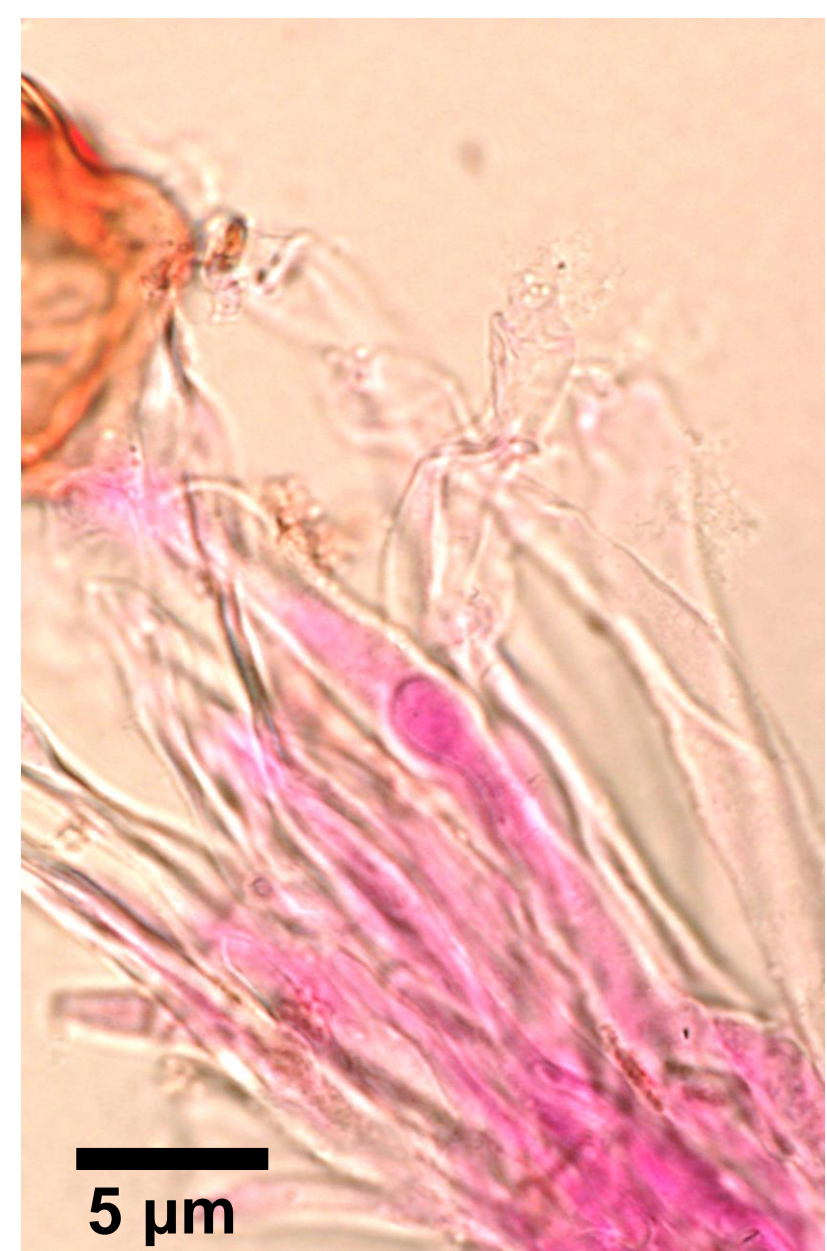
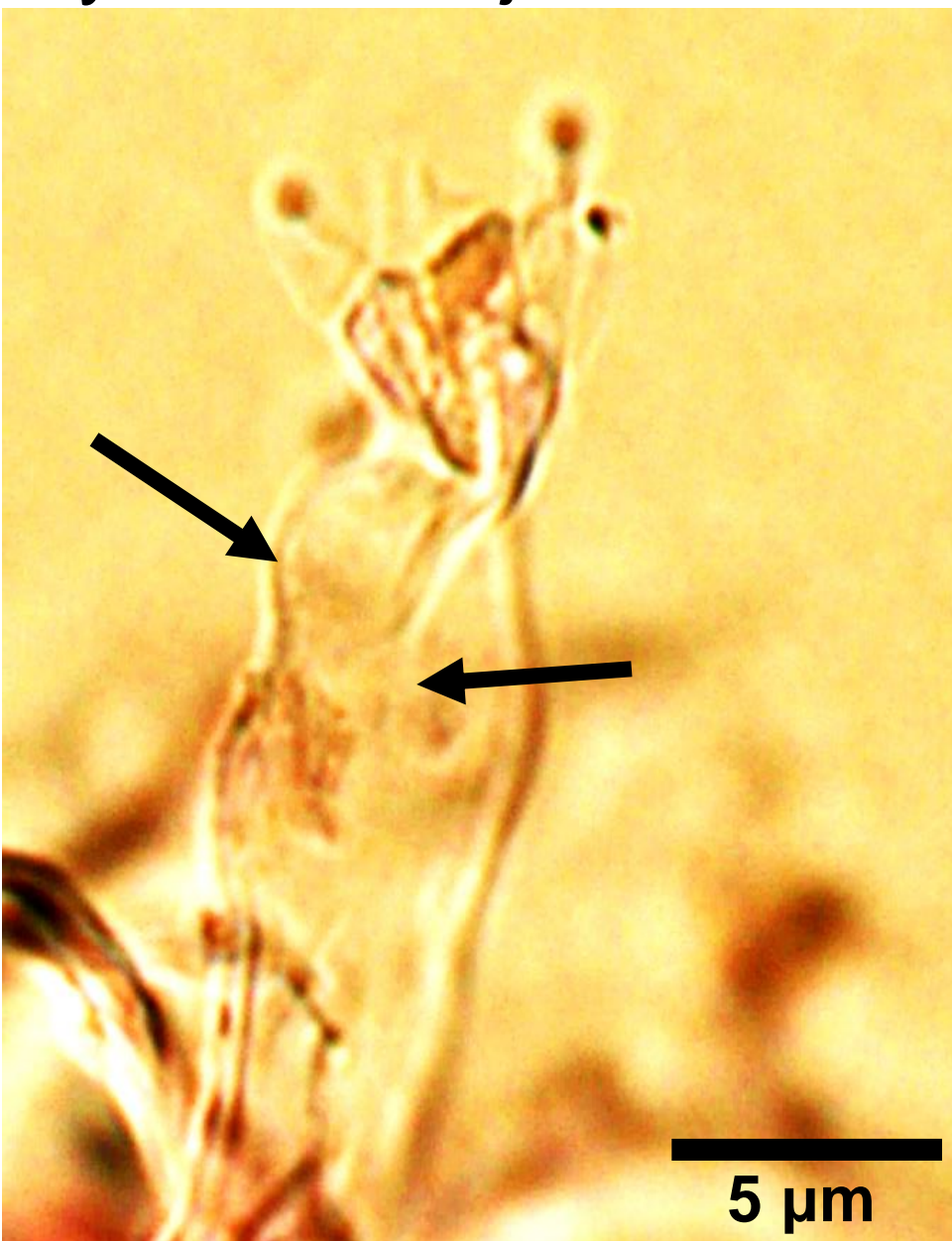
Moved to Cryptobasidiaceae based on molecular evidence (Bauer et al., 2001)

Aim: To compare the morphology of hymenium of *L. hachiojense* with the herbarium specimens of *L. lauri*.



Symptom on *L. azonica*
By Dr. L. Quijada

L. Lauri TFC.Mic.416



Protruding basidium from probasidium of *L. lauri*

Methods: Fresh materials of *L. hachiojense* on *C. japonicum* from Hachijo-island, Japan and the herbarium materials of *L. lauri* from Herbario de la Universidad de la Laguna, Islas Canarias, Spain (TFCMic. 35,167, 252, 308, 416, 2178, 2257, and 3041) were used for morphological observations as described previously (Nagao et al., 2003) and conducted by light microscope.

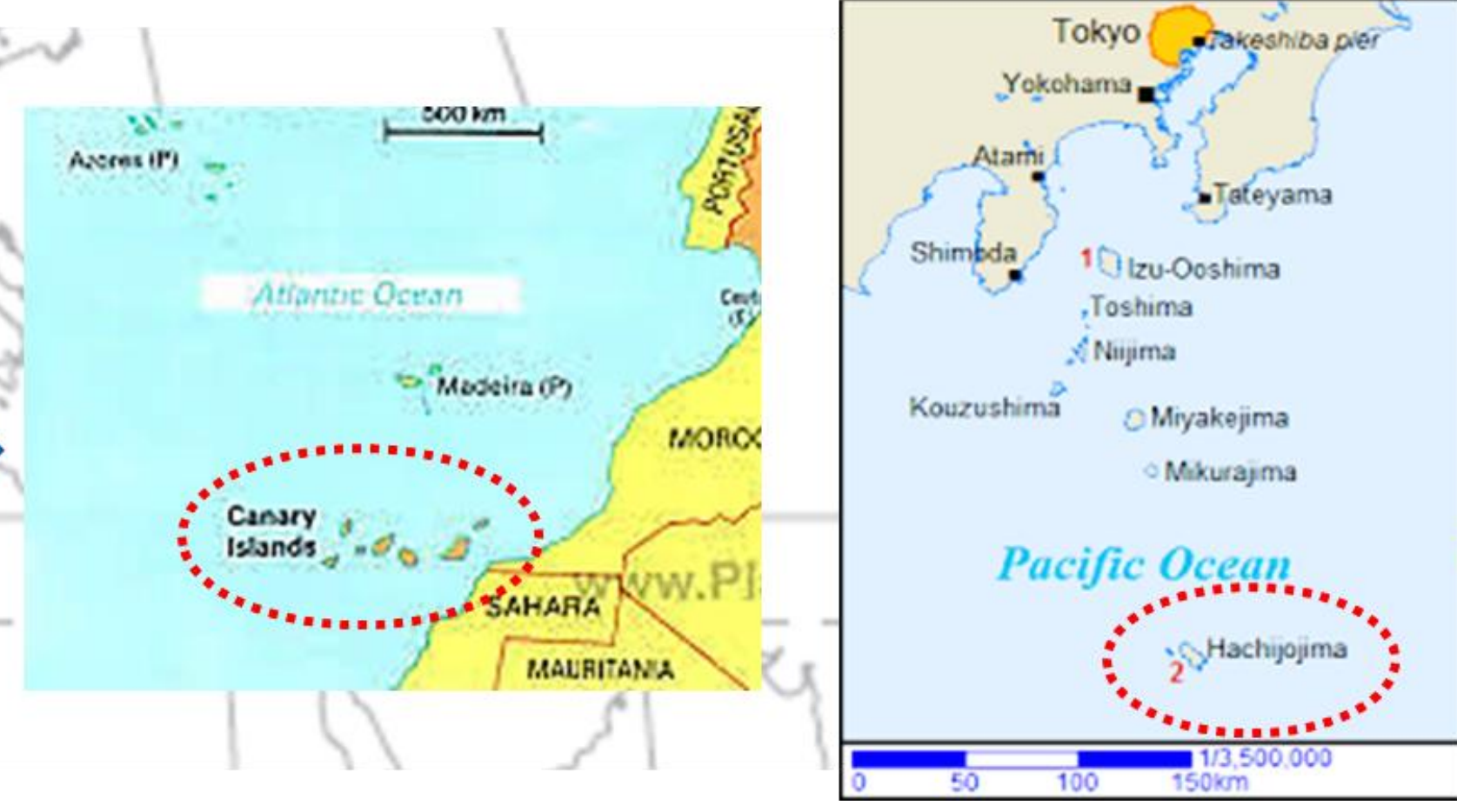
Results: Hymenium formed inside the lacunae on the host tissue below the epidermis and composed of basidia with 2 to 5 sterigmata and probasidia. Hyphae not developing directly on the surface of epidermis but running along the intercellular space of the gall cells (A,B). Haustoria formed inside the gall cells (C). Basidia protruding from probasidia, clavate to cylindrical, 106.3-146.7 x 7.6-10.1 μm including probasidia, not fasciculated. Probasidia thick-walled, obtuse at the apex, 35.4-88.3 x 5.1-7.6 μm, becoming slightly slender at the base (D). Basidia and probasidia formed inside lacunae. Sterigmata 1-2 μm in diameter at the base and 3-5 μm in height, emerging outwardly and tapering towards the tip (E, F). Basidiospores ellipsoid to ovoid, 14-21 x 4-6 μm, hyaline, smooth, 2-3 guttulate, one-celled when formed, becoming septate with (0-)1(-3)-septa.

Conclusion: Basidia are evidently formed inside the galls not on the surface. *L. hachiojense* has probasidium and its basidium emerged from probasidium. No clamp was observed.

Acknowledgment: We thank Dr. Luis Quijada and Herbario de la Universidad de La Laguna, Islas Canarias, Spain for kindly loan of 8 specimens of *L. lauri*.

References: Iijima et al. (1985) A new species of *Exobasidium* on *Cinnamomum japonicum* Sieb. Transactions of the Mycological Society of Japan 26: 161-167.

Kakishima et al. (2017) *Laurobasidium hachiojense*, comb. nov. (Cryptobasidiaceae) causing aerialrootlike galls on *Cinnamomum japonicum* in Japan. Phytotaxa 303 (1): 097-100.



Laurobasidium hachiojense (Kakishima et al, 2017)

≡ *Exobasidium hachiojense* Otani et al. (Iijima et al, 1984)

Reasons: based on the presence of a gastroid-like sporulation on the surface of the galls and by the host-plant specialization, and published molecular data.

Table 1. Morphological comparison and host specificity among 3 Families in Order Exobasidiales.

	Family		
	Bracybasidiaceae	Cryptobasidiaceae	Exobasidiaceae
Sporulation	On the surface of the host organs protruding through stomatum or emerging from the disintegrated epidermis	Gastroid, internally in peripheral lacunae of the host galls	On the surface of the host organs protruding through stomatum or emerging from the disintegrated epidermis
Appearance of basidium and sterigma	Holobasidium with two sterigmata	Holobasidium without sterigmata (<i>Laurobasidium</i> emerging from probasidium with sterigma)	Holobasidium with more than two sterigmata
Basidiospore	Thin-walled, ballistosporic	Thick-walled, liberating basidiospore mass (<i>Laurobasidium</i> being ballistosporic and having (2-) oil-drops)	Thin-walled, ballistosporic
Hilar appendix	Adaxial	No (<i>Laurobasidium</i> being abaxial)	Abaxial
Haustorium	Absent	Present	Present or absent
Host	Monocots	Lauraceae	Camellia, Ecripaceae, Ericaceae, Saxifraga, Symplocos

Data were referred from Begerow et al. (2002).

