

Notes on Japanese Myxomycetes (II)
New Species of *Lepidoderma* and *Arcyria*

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日本産真性粘菌雜記 II

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Two new species of myxomycetes are described from Japan. *Lepidoderma takahashii* Y. Yamamoto is characterized by porcelain shell-like sessile sporangia with many limy scales and spores of smaller size. *Arcyria flavescens* Y. Yamamoto is distinguished from other species of the genus in having capillitium with dense markings and spores of larger size.

(Continued from J. Jpn. Bot. 66: 12-13, 1991)

Lepidoderma takahashii Y. Yamamoto, sp. nov.
(Fig. 1, A-C)

Fructificationes sporangii vel subplasmodiocarpi, gregariae, sessiles, subglobosae, pulvinatae, 0.3-0.7 mm in diam. vel subplasmodiocarpoideae usque ad 1.2 mm in longitudine. Hypothallus inconspicuus. Peridium duplex. Stratum exterius pustulatum, interdum ocellatum, subcartilagineum, nitens, rufo-brunneum vel saturate brunneum cum aureis vel cinereo-aurantiacis pustulis et albis vel translucetibus squamis crystallinae calcis. Squamae sphaericae vel ellipticae usque ad 60 μ m in diam., cum radiantibus lineis. Stratum interius membranaceum, translucens. Dehiscencia irregularis. Capillitium e filamentis gracilioribus, fere incolor, flexuosum, gradatim angustatum versus apicem, paene simplex, interdum cum fuscatis vel pallidis nodulis.

Columella discoidea, pulvinata vel hemisphaeroidea, pallide aurantiaca, rugulosa. Sporae globosae, 7.9-9.6 μ m in diam. vel ellipsoideae, 9.0-11.7 \times 7.8-9.6 μ m, per saturam fere atrae, cinereo-brunneae vel rufo-brunneae luce transmissa, verrucosae. Plasmodium ignotum.

Fructifications sporangiate to subplasmodiocarpous. Sporangia moderately gregarious, sessile, usually pulvinate (then like cowries) or depressed globose, rarely subglobose, 0.3-0.7 mm (almost 0.5 mm) in diameter, sometimes elongated and becoming subplasmodiocarpous, up to 1.2 mm in length. Hypothallus inconspicuous, almost obsolete. Peridium double, but frequently appearing single for two layers being closely contact. Outer layer pustulate, sometimes ocellate, subcartilaginous, shining, reddish brown to dark brown mottled with golden yellow to grayish

orange pustules, but pustules sometimes indistinct (grayish orange to orange gray mottled with light brown small pustules in immature sporangia), and also with white to translucent crystallized lime scales. Scales usually superficial on the outer peridium, sometimes embedded in it, spherical to elliptical, up to $60\ \mu\text{m}$ in diam., with many radial black or pale lines from the center. Inner layer membranous, translucent. Dehiscence irregular. Capillitium of smooth, slender threads, the threads nearly colorless, flexuous, gradually tapering towards the tip, sometimes with pale and/or dark thickenings, almost simple but sometimes branching dichotomously and rarely fused with neighboring capillitium threads. Columella discoid,

pulvinate or hemispheroidal, light orange, rugulose. Spores globose $7.9\text{--}9.6\ \mu\text{m}$ (mean = 8.8 , $\text{sd} = 0.44$, $\text{no} = 20$) or ovoid to ellipsoidal, $9.0\text{--}11.7\ \mu\text{m}$ (mean = 9.9 , $\text{sd} = 0.61$, $\text{no} = 20$) \times $7.8\text{--}9.6\ \mu\text{m}$ (mean = 8.6 , $\text{sd} = 0.53$, $\text{no} = 20$), moderately warted, sometimes with indistinct clustered wartlets, nearly black in mass, grayish brown to reddish brown in transmitted light. Plasmodium unknown.

Habitat. On fallen leaves, Shikamagatsujiyama, Kurashiki-shi, Okayama Pref., leg. Kazunari Takahashi, 14 VII 1990 (Y. Yamamoto no. 9619—holotype, TNS); on fallen leaves of *Myrica rubra* Sieb. & Zucc., Seki, Ohtsu, Kochi-shi, Kochi Pref., leg. Y. Yamamoto, 27 VI 1991

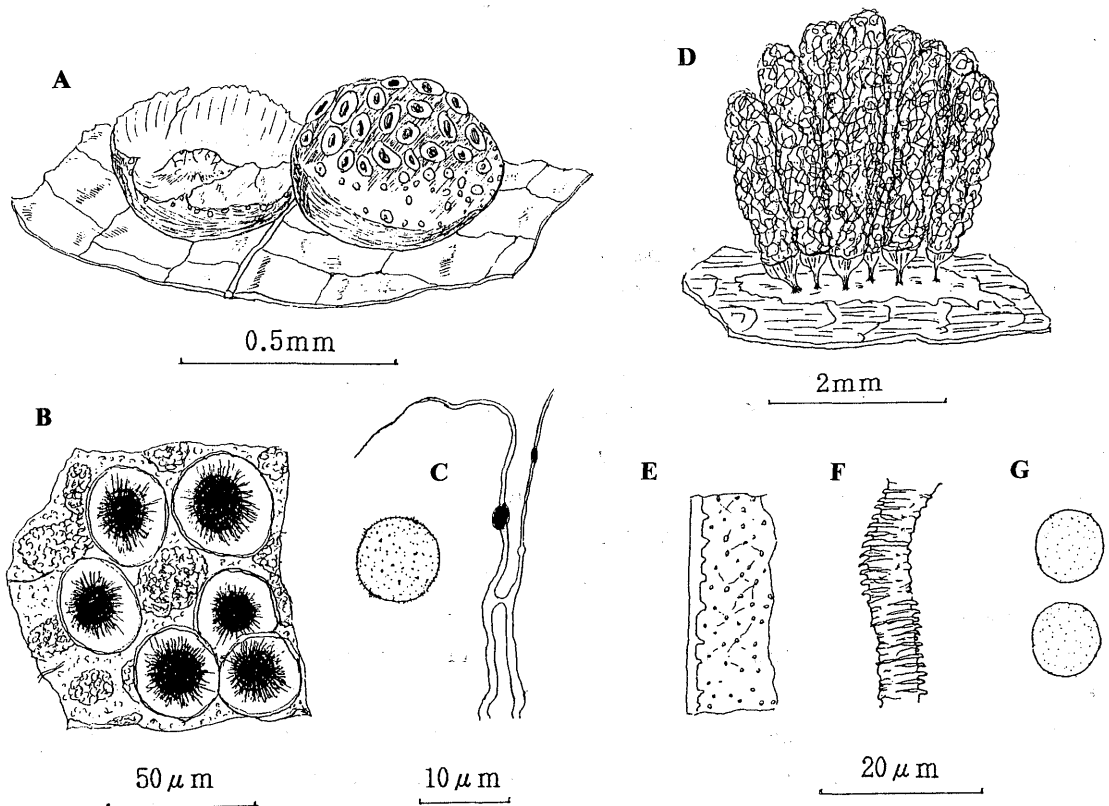


Fig. 1. A–C, *Lepidoderma takahashii* Y. Yamamoto, sp. nov. A: Two sporangia (dehiscent one on the left). B: Outer peridium with pustules and scales. C: Capillitium threads and a spore. D–G, *Arcyria flavescens* Y. Yamamoto, sp. nov. D: Clustered sporangia. E: Markings of the inner surface of the calyculus. F: Part of a capillitium thread. G: Two spores.

(Y. Yamamoto no. 11396).

Fructifications of the present myxomycete were found firstly by Mr. Kazunari Takahashi. Immature sporangia resembled those of *Diderma darjeelingense* Thind et Sehgal in its outer appearance but microscopic observation revealed many limy scales characteristic to *Lepidoderma*. The genus *Lepidoderma* embraces nine species. The present species is distinguished from *L. crassipes* Flatau, Massner et Schirmer, *L. tigrinum* (Schrad.) Rost. and *L. stipitatum* Flatau by its sessile sporangia. It differs from *L. aggregatum* Kowalski, *L. carestianum* (Rab.) Rost., *L. chailletii* Rost., *L. crustaceum* Kowalski, *L. didermoides* Kowalski and *L. granuliferum* (Phill.) R. E. Fries in having smaller spores.

Arcyria flavescens Y. Yamamoto, sp. nov. (Fig. 1, D–G)

Sporangia fasciculata, stipitata, cylindracea raro ovoidea, flava, decolorans versus brunneo-flava, erectiuscula, ubi expansa usque ad 3 mm alta et 0.5 mm diam. Hypothallus membranaceus, translucens vel albidus, unus ad coloniam. Stipes cylindraceus vel attenuatus deorsum, striatus, cum cystis interius, usque ad 0.3 mm altus. Peridium evanescent praeter calyculum. Calyculus membranaceus, plicatus, papillatus et leviter reticulatus, usque ad 0.3 mm diam. Capillitium reticulum laxum formans, affixum ad calyculum sed interdum facile cadens, tubi 4.8–7.3 μm diam. cum annulis et semi-annulis vel dentibus, 3.6–5.0 μm sine sculpturis. Sporae globosae, minutissime verruculosae, interdum cum verruculis dispersis, indistinctis, fasciculatis, per saturam flavae versus brunneo-flavae, pallidae luce transmissa, 7.6–9.5 μm diam. Plasmodium ignotum.

Fructifications sporangiate. Sporangia clustered in scattered groups, stipitate, usually cylindrical, rarely ovoid, when expanded up to 3 mm in total

height and up to 0.5 mm in diam., vivid yellow, fading to brownish yellow, erect or bent, rarely drooping. Hypothallus common to the colony, membranous, translucent or whitish, shining. Stalk pale yellow to yellow, sometimes darker towards the base, cylindrical or tapering downwards, rarely twisted, striate, nearly sessile to short, up to 0.3 mm in height, filled with spore-like cysts measuring 10–16 μm in diam. Peridium evanescent except for the cup. Calyculus rather clearly defined, broad to funnel-shaped, up to 0.3 mm in diam., plicate, membranous, yellow to brownish yellow (pale yellow and translucent in transmitted light), papillate and faintly reticulate on the inner surface. Capillitium a moderately loose network of somewhat flattened, elastic, branching and anastomosing threads, threads pale yellow in transmitted light, attached to the calyculus but rather easily detached, marked with many close-set half-rings, cogs and transverse ridges, 4.8–7.3 μm (mean = 6.2, sd = 0.53, no = 20) including markings, but basal threads are larger and up to 8.1 μm , 3.6–5.0 μm (mean = 4.3, sd = 0.46, no = 20) in diam. without markings. Spores globose, very minutely warted, sometimes with a few, scattered, indistinct clusters of wartlets, vivid yellow to brownish yellow in mass, nearly colorless in transmitted light, 7.6–9.5 μm (mean = 8.6, sd = 0.46, no = 40) in diam. Plasmodium unknown.

Habitat. On bark of living *Citrus* sp., Kuzu, Edagawa, Kamiyakawa, Gohoku-mura, Kochi Pref., leg. Y. Yamamoto, 13 VIII 1978 (Y. Yamamoto no. 100); on bark of living *Taxodium distichum* Rich., Funato, Ohtsu, Kochi-shi, Kochi Pref., leg. Y. Yamamoto, 23 VII 1989 (Y. Yamamoto no. 8323 – holotype, TNS).

Small yellowish sporangia of the present myxomycete are similar to diminutive form of *Arcyria obvelata* (Oeder) Onsberg and *A. virescens* G. Lister, but differ in having close-set capillitium

markings and larger spores. The present species is distinguished from *A. pomiformis* (Leers) Rost. by its clustered, cylindrical sporangia and from *A. insignis* Kalchbr. et Cooke by its larger spores and larger capillitium threads.

The author is deeply grateful to Mr. Kazunari Takahashi who kindly allowed me to study the specimens of *Lepidoderma takahashii*, and to Mrs. N.E. Nannenga-Bremekamp for her helpful suggestion.

要 旨

日本産真性粘菌の2新種を報告した。*Lepidoderma takahashii* Y. Yamamoto は高橋和成氏によって岡山県の落葉上で初採集されたもので、寶貝（ハナマルユキガイなど）に似た、光沢のある、たいへん美しい子実体をつくる。未熟な子実体は *Diderma darjeelingense* Thind et Sehgal に似るが、顕微鏡下に鱗片状の石灰の結晶が認められ、*Lepidoderma* 属のものである。同属他種とは子実体が無柄で、胞子が小さいことなどで区別できる。*Arcyria flavescens* Y. Yamamoto は高知県のラクウショウやミカンの樹皮上から採集された。小さい黄色の胞子嚢をもち、類似種からは細毛体の模様が密で胞子が大形であるなどの点で区別される。