

**Zeitschrift:** Mycologia Helvetica  
**Herausgeber:** Swiss Mycological Society  
**Band:** 7 (1995)  
**Heft:** 1

**Artikel:** A new *Inocybe* from Tokyo, *I. fastuosa* spec. nov.  
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**DOI:** <https://doi.org/10.5169/seals-1036363>

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# A new *Inocybe* from Tokyo, *I. fastuosa* spec. nov.

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Summary. – *Inocybe fastuosa* sp. nov. is described from material collected in Tokyo. Of special interest is the unusual fact that the stipe is covered by the caulocystidia from the apex down to about 4/5 of its length, despite the fact that it has an equal or only subbulbous base. *I. fastuosa* belongs to the section *Marginatae* Kühner in the modern sense of Singer (1986). It is remarkable because it combines two Singer's emendations of section *Marginatae*, a non marginate stipe base and the (almost) lack of caulocystidia in the lower part of the stem, in the same species.

Résumé. – *Inocybe fastuosa* sp. nov. est décrit à partir de matériel récolté à Tokyo. Sa position systématique est discutée.

Zusammenfassung. – *Inocybe fastuosa* sp. nov. aus Tokyo wird neu beschrieben und seine systematische Stellung diskutiert.

Riassunto. – *Inocybe fastuosa* sp. nov. è descritto a partire da materiale raccolto a Tokyo. La posizione sistematica di questo *Inocybe* è discussa.

## Introduction

Various *Inocybes* are known from Japan. Imai (1938) reported six species of *Inocybe* as new records in Hokkaido, Japan. Kobayasi (1952) established seventeen new species and five new forms of *Inocybe* from Honshu, Japan. At the same time Kobayasi (1952) redescribed twenty taxa of *Inocybe* from Honshu. Seven new species of *Inocybe* were described by Hongo (1958, 1959a,b, 1963a,b, 1982) from Japan.

In recent years, several species of *Inocybe* have been reported by the author as new species or new records from Japan. Kobayashi & Courtecuisse (1993) described two new species of *Inocybe*, *I. pseudorhacodes* and *I. chrysochroa* from Gunma Pref. and Shiga Pref. respectively. Kobayashi (1993) established the new subgenus *Leptocybe* for *I. casimiri* and *I. acutata*. This subgenus is characterized by angulate to echinulate spores and the lack of metuloids. Kobayashi & Hongo (in press) redescribed *I. flocculosa* from Shiga Prefecture, and Kobayashi (in press) redescribed *I. adaequata* and *I. napipes* and discussed their variability.

## Materials and method

The specimens cited in this paper are deposited in herbarium of the Natural History Museum and Institute, Chiba (CBM-FB), Japan, the Tottori Mycological Institute (TMI), Japan, the Musée et Jardins Botaniques Cantonaux Lausanne (LAU) and the author's private herbarium (TAKK), Lausanne, Switzerland.

The colour terms used are those from Kornerup & Wanscher (1978) or refer to Munsell notation.

For microscopic observations, dried specimens were rehydrated in 5% KOH solution or 10% NH<sub>4</sub>OH solution. Length measures exclude apiculus and sterigmata for spores and basidia respectively.

Thin-walled, clavate to pyriform elements are called paracystidia in this paper. This term is taken from Kuyper (1986).

### *Inocybe fastuosa* Takahito Kobayashi, spec. nov. Plate 1, figs 1–6.

Pileo –70×–15 mm lato, subumbonato, brunneo-luteo, stramineo, fibrilloso, rimoso. Lamellis adnatis, adnexis, luteo-brunneolis. Stipite 50–110×5–11 mm, aequali, subbulboso, albo, flavido, apice et patre medio pruinoso. Carne alba.

Sporis (7.6–)8.4–10.2(–12.2)×(5.6)6.2–8.8 µm, prominenter nodulosus, luteo-brunneis. Basidiis 22–28×8–13 µm, tetra-sporicis. Pleurocystidiis 45–67×16–27 µm, metuloideis. Cheilocystidiis 34–48(–68)×17–23 µm, metuloideis. Caulocystidiis metuloideis, apice numerosis, base raris.

Holotypus: CBM-FB 5234

Pileus –70×–15 mm, when young hemispherical, then subumbonate; brownish yellow (10YR 6/6) to stramineous, light brown (6D6) to brown (6F8) on the umbo; fibrillose, rimose, often distinctly rimose. Lamellae subventricose, adnate to adnexed, close to crowded; yellowish brown (5D5, 5D6); edge flocculose, white. Stipe 50–110×5–11 mm, almost equal to somewhat swelling toward the apex, base sometimes subbulbous; stuffed to partly hollow; white (4A1) to pale yellow (4A3), surface farinaceous and almost smooth toward the base, shiny. No traces of a cortina could be seen. Context white, in pileus –3.2 mm thick, at umbo up to 4.4 mm, in stipe shiny. Odour strong, spermatic.

Chemical reactions on pileus: KOH (5%) negative, FeCl<sub>3</sub> (20%) olive green within fifteen minutes. On lamellae: KOH (5%) negative, FeCl<sub>3</sub> (20%) olive within fifteen minutes. On stipe: KOH (5%) rapidly pale yellow, FeCl<sub>3</sub> (20%) olive within fifteen minutes. On context of stipe: KOH (5%) yellowish white (3A2) within fifteen minutes, FeCl<sub>3</sub> (20%) dark grayish yellow within fifteen minutes.

Spores (7.6–)8.4–10.2(–12.2)×(5.6–)6.2–8.8 µm, Q=1.1–1.5; nodulose, with prominent nodules; yellowish brown. Basidia 22–28×8–13 µm, clavate, 4-spored, with almost hyaline to light yellow (3A5) contents in NH<sub>4</sub>OH. Pleurocystidia 45–67×16–27 µm, fusiform to broadly fusiform with short-pedicellate or rounded base, thick-walled (–5.4 µm), almost hyaline to slightly yellowish in KOH. Cheilocystidia 34–48(–68)×17–23 µm, broadly fusiform with a short-pedicellate or rounded base, thick-walled (–5.2 µm), almost hyaline to slightly yellowish in KOH. Paracystidia on edge of lamellae mixed with metuloids, rather abundant, thin-walled, frequently catenate, with a total length up to 45 µm, terminal cells 16–20×6–11 µm, clavate to obovoid. Hymenophoral trama subregular to regular, made of hyphae 5.2–6.0 µm in diameter. Caulocystidia descending to  $\frac{4}{5}$  or almost to the base of stipe; apical caulocystidia measure 40–69×12–24 µm, are narrowly utriform to fusiform with pedicellate or rounded base and thick-walled (–5.6 µm), almost hyaline to slightly yellowish in KOH; the caulocystidia of middle of stipe are similar in morphology to the apical ones and rather abundant; on the base of stipe they measure 38–55×13–22 µm, are fusiform with rounded base, sometimes with a short pedicel, thick-walled (–4.8 µm), scanty to rare. Paracystidia mixed with metuloids; apical ones catenate, with a total length up to 36 µm, terminal cells 14–21×9–11 µm, obovoid to clavate abundant; on base of stipe they are catenate, with a total length up to 47 µm, terminal cells 19–27×12–18 µm, obovoid, scanty. Pileipellis a cutis, with the uppermost layer up to 66 µm thick, composed of subregular hyphae 2.8–5.8 µm in diameter, almost hyaline, the subtending layer up to 57(–136) µm thick, composed of subregular hyphae 2.6–4.2 µm in diameter, brown. Clamp connections present.

Collections examined: Tsurumaki, Setagaya-ku, Tokyo, Japan, June 18, 1988, leg. T. Kobayashi, CBM-FB 5234 (= TAKK 628-1): holotype, TMI 16981 (= TAKK 628-3), TAKK 628-2 in LAU, TAKK 628-4 in LAU: Isotypes; July 15, 1989, leg. T. Kobayashi, TAKK 845. Under *Pasania* and *Cedrus*, June 22, 1992, leg. K. Iguchi, CBM-FB 5237 (= TAKK 1732-1), TAKK 1732-2.

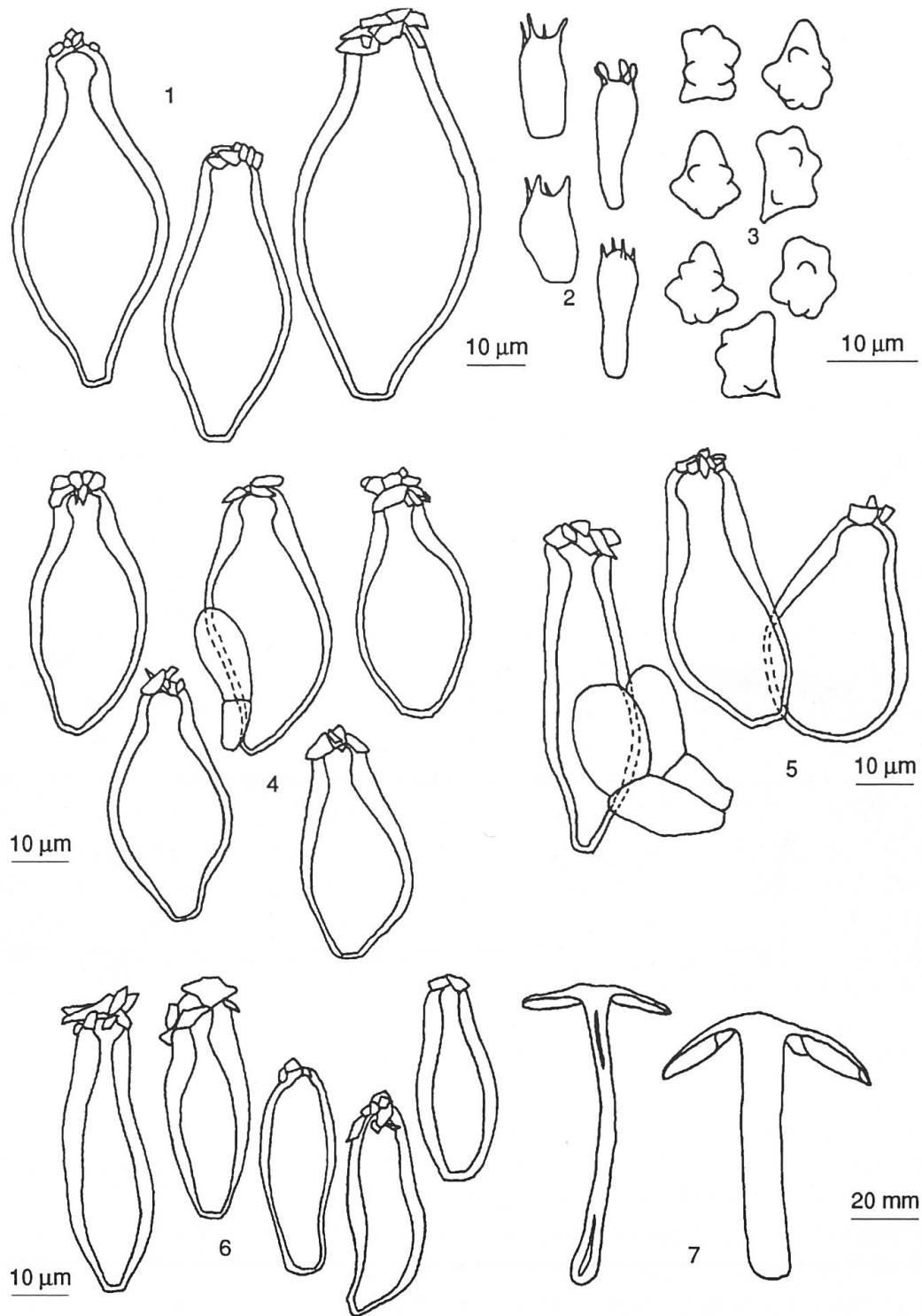
Etymology: from latin *fastuosus* (= superb, stout), referring to the stout basidiocarps.

## Discussion

*Inocybe fastuosa* is similar to *I. pseudohiulca* Kühner, from which it differs by the prominent-nodulose spores, the shorter pleurocystidia and strong spermatic smell. *I. pseudohiulca* has larger spores: Kühner (1933) gives (9.5–)10–13(–13.7)×(6.5–)7.2–9.5 µm, and Stangl (1989) gives 10–13.5(–15)×7.5–9(–10) µm.



*Plate 1 Inocybe fastuosa T. Kobayashi*  
*Carpophores in the habitat.*



Figs. 1–7 *Inocybe fastuosa* T. Kobayashi 1: Pleurocystidia, 2: Basidia, 3: spores, 4: Cheilocystidia and paracystidia, 5: Caulocystidia and paracystidia on apex of stipe, 6: Caulocystidia on base of stipe, 7: Carpophores.

*Inocybe fastuosa* is also similar to *I. glabrodisca* Orton, but the latter has an almost greasy pileus (when wet), rounded knobbly (not prominent) spores and lageniform cheilocystidia. It resembles *Inocybe nodulosa* Kauffman, but differs by the presence of metuloid caulocystidia on the base of the stipe, by strong odor and lack of a conspicuous napiform bulb.

*Inocybe fibrosoides* Kühner resembles *I. fastuosa* due to spore character, but can be separated by a large marginate bulb of the stipe. In addition, *I. fibrosoides* is inodorous and its pileus is rimulose.

*Inocybe fibrosa* (Sow.) Gill. also resembles *I. fastuosa* due to the habit, but *I. fibrosa* has a white basidiocarp, a slightly rimose pileus, weakly nodulose spores and longer cystidia (70–90×10–16 µm).

Despite the fact that *Inocybe fastuosa* lacks a marginate bulb and has caulocystidia at the base of its stipe (scanty), the present author thinks that it belongs to the subgenus *Inocybe*, section *Marginatae* Kühner, as explained below.

In 1933 Kühner defined his section *Marginatae* by the absence of a cortina on the stipe which is completely covered by caulocystidia and shows a marginate bulb. Singer (1986: 605) accepted this section but emended it to allow species without a marginate bulb or having a stipe without caulocystidia in its lower part. It is in this sense that *I. fastuosa* belongs to the section *Marginatae*.

However, with the combination both of a non marginate stipe base and the almost lack of caulocystidia in the lower part of the stem, *I. fastuosa* could also be placed in section *Inocybe* (= *Cortinatae* Kühner & Boursier 1932), if a cortina would be present. In search of cortina-like structures in section *Marginatae*, a careful examination of *I. chrysochroa*, otherwise a true member of section *Marginatae*, revealed clamped hyphae of the same colour and of the same diameters those which are described from a cortina between the marginate bulb and the margine of the pileus in very early stage, indicating that section *Marginatae* and section *Inocybe* (= *Cortinatae*) could be lumped, and need critical re-evaluation.

### Acknowledgements

The author is much indebted to Professor H. Clémenton (Institute for Systematic Botany, University of Lausanne) for his review of this paper, to Dr. Beatrice Senn-Irlet (Institute for Systematic Botany, University of Lausanne) for her valuable suggestions in preparation of this paper, to Assistant Professor K. Yokoyama (Shiga University) for his kind suggestions in this research, to Library of Tottori Mycological Institute for precious research data, to Mr. K. Iguchi for his providing the fresh specimen of *I. fastuosa*.



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