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Studies in the Agaricales of New Zealand: some new and revised species of *Campanella* (Tricholomataceae: Collybieae)

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Abstract From a study of species of *Campanella* P. Hennings collected in New Zealand, descriptions are given of three new species, *C. fimbriata*, *C. rubescens*, and *C. vinosolivida*. Two species previously described from New Zealand as *Resupinatus tristis* and *R. dorotheae* have been re-examined and combined together as *C. tristis* comb. nov.

Keywords taxonomy; New Zealand fungi; Agaricales; Tricholomataceae; *Campanella*; new species; new combination

INTRODUCTION

The genus *Campanella* was erected by Hennings (1895) to accommodate agarics with an inferior, subreticulate hymenium, venous to rib-like anastomosing lamellae, and hyaline, subglobose spores. The genus appears from the literature to be predominantly tropical, subtropical, and southern temperate, found most commonly in tropical and subtropical America, Africa, Sri Lanka, Asia, Oceania, and Australia, with some few, very scattered, representatives in the north temperate zone in Europe, Japan, south-east Russia, and south-western Canada (Reid 1966; Otieno 1968; Redhead 1974; Singer 1975; Parmasto 1981). Singer (1945) outlined the limits of the genus, considering it akin to cyphellaceous genera, but later (Singer 1962) he admitted it to the Agaricales, contrasting it carefully with *Marasmiellus* to which he believed it to be closely related. He recognised 15 valid species of *Campanella*, which he subsequently increased to about 30 (Singer 1986), specifically excluding all species with stellate spores, although he included those with "irregular spores" as long as the context was gelatinised. The related, partially gelatinised fungus with stellate spores, *Marasmiellus nigripes* (Schwein.) Sing., was placed in *Marasmiellus*, Section Rameales Lange, stirps Nigripes (Singer 1962), which he later (1973) raised to Section Nigripedes, adding to it *M. nigripes* var. *subcinerus* (Berk. & Br.) Pegler, *M. reductus* Sing., and *Pterospora atrocyanea* Métrod. Horak (1983) saw a close association between these fungi with stellate spores and those *Campanella* species with irregular to angular spores and used this character as the basis for adopting and extending Métrod's (1949) genus *Pterospora* (type species *P. atrocyanea* Métrod), later changed to *Tetrapyrgos* (Horak 1986) for priority reasons, to include 15 species formerly placed in *Campanella* and *Marasmiellus*. Singer (1986), however, did not accept the need for the genus *Pterospora* (*Tetrapyrgos*), believing it to be too narrowly based, and made it a synonym of *Marasmiellus* with the subsection Nigripedes for *Marasmiellus nigripes* and its several varieties and related species. Pegler (1987) also retained *T. alba* (Berk. & Curt.) Horak and *T. nigripes* (Schw.) Horak in *Campanella* and *Marasmiellus*, respectively.

Singer (1975) erected several sections and subsections for the genus *Campanella*, which he later refined (1986). As these were designed to include the species that Horak has since removed to *Tetrapyrgos*, no attempt has been made to place the new species described below into Singer's system until this controversy is resolved. However, affinities of the New Zealand species with previously described species are noted.

The distribution of the species Horak classifies in *Tetrapyrgos* appears to be predominantly

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Southern Hemisphere, with several in the south temperate zone. Two species are recorded from Australasia: *T. olivaceonigra* (Horak) Horak, the first record of the genus in New Zealand, on *Scirpus* in beech forest in the South Island, and *T. goniospora* (Reid) Horak on *Theobroma cacao* L. from New Guinea (Reid 1966).

The first record of the genus *Campanella* in New Zealand has been made recently by Hood (1992), although no species were cited. Earlier, two fungi resembling *Campanella* were recorded by Stevenson (1964), as *Resupinatus tristis* and *R. dorotheae*, distinguished mainly by the presence in *R. dorotheae* of a more distinct stipe, lamellae not intervenose, and rough spores. Horak (1971), however, found the spores of *R. dorotheae* to be smooth, and recombined the two species as *Marasmiellus tristis* and *Delicatula dorotheae*, respectively. A further examination of the types of both fungi, however, has shown that they both have hyaline, inamyloid, thin-walled spores, broadly ellipsoid to "humped" on the abaxial side, strongly gelatinised context and trama, and complex Rameales structure in the pileipellis, all distinguishing characteristics of the genus *Campanella*. Many collections have since been made in New Zealand of a similar fungus, the morphology of which shows considerable variability, even within one collection, in characters such as size of basidiome, degree of interveining (small basidomes often having none), and degree of development of the stipe. Nearly all basidiomes exhibited an excentric stipe to some extent, more conspicuous and more nearly central in small or young specimens. The anatomical structure of both was completely consistent. It is proposed, therefore, to combine both species as ***Campanella tristis*** comb. nov., and this will be described in full below.

METHODS

Standard methods for the examination of agarics were followed. Colour codes and terminology are from Kornerup & Wanscher (1967) and Rayner (1970). Collecting areas are located according to the system of Crosby et al. (1976). All descriptions are based on the type unless otherwise indicated. Magnification of the figures (unless otherwise stated) are: basidiomes, natural size (bar = 20 mm); basidia, cystidia, and pileipellis, ×1000 (bar = 20 μm); spores, ×2000 (bar = 10 μm). *Q* is the mean length/breadth ratio of spores.

DESCRIPTIONS OF THE SPECIES

In addition to *C. tristis*, recorded above, further studies have revealed three other species of *Campanella* present in New Zealand, all of which appear to be new species.

Key to species of *Campanella* presented in this study

1. Basidiomes changing colour with bruising 2
   Basidiomes not changing colour with bruising 3
2. White basidiomes staining red ..... *C. rubescens*
   White basidiomes staining glaucous ..... *C. tristis*
3. Basidiomes relatively large (–30 mm), dorsally attached, hymenophore densely intervenose, brightly coloured ..... *C. vinosolivida*
   Basidiomes small to very small, usually <10 mm, drab, stipitate ..... *C. fimbriata*

Campanella fimbriata sp. nov. Fig. 1

Pileus 3–10 mm, suborbicularis vel reniformis, infuscatus, laevis, pellucidus ubi madidus, albus ubi aridus, pubescens, tessellatus in superficie, secundum imaginem lamellarum, margine manifeste involuta, planus. Hymenophorum subalbidum ubi madidum, armeniacum vel fulvum ubi aridum, cum lamellis 6–8 principibus stipiti adnexis, crassis et velut plicatis, furcatis. Basidiomata maiora ornantur venis transversis inter se iungentibus, plerumque subter venis principibus. Stipes perbrevis, 2–3 × 1 mm, bubalinus, centralis vel excentricus, plerumque geotrope curvatus, fibrosus, fibrillosus in superficie, nonnumquam substrato adnexus interveniente nigro mycelio, albis rhizomorphis in substrato coniunctus. Paullum ureum olet, sapore ignoto. Sporae imago ignota. Sporae 8.5–12.0 × 6–7 (9.0 × 6.2 μm), *Q* = 1.4, late ellipsoideae vel paullum ovatae aspectu frontali, aspectu laterali saepe parum complanatae in latere adaxiali, in abaxiali protuberantes, hyalinae, inamyloideae, nec dextrinoideae nec cyanophilae, parietibus tenuibus. Basidia 25–35 × 4–7 μm, clavata, tetraspora, sterigmata 3–5 mm. Cheilocystidia 30–60 × 4–8 μm, cylindrica, nonnumquam parum flexuosa et anguste clavata, hyalina, parietibus tenuibus, marginem sterilem lamellarum formantia. Desunt pleurocystidia. Trama ex angustis (2–3 μm) hyphis, hyalinis, vitreosis, parietibus gelatinatis, subregularis. Subhymenium vix distinguibile, ex hyphis angustis et gelatinatis. Contextus ex angustis (2–4 μm) hyphis, intertextis, gelatinatior quam trama. Pileipellis ex hyphis repentibus, –5 μm diam., cum hyphis rectis valde nodulosis, diverticulatis in

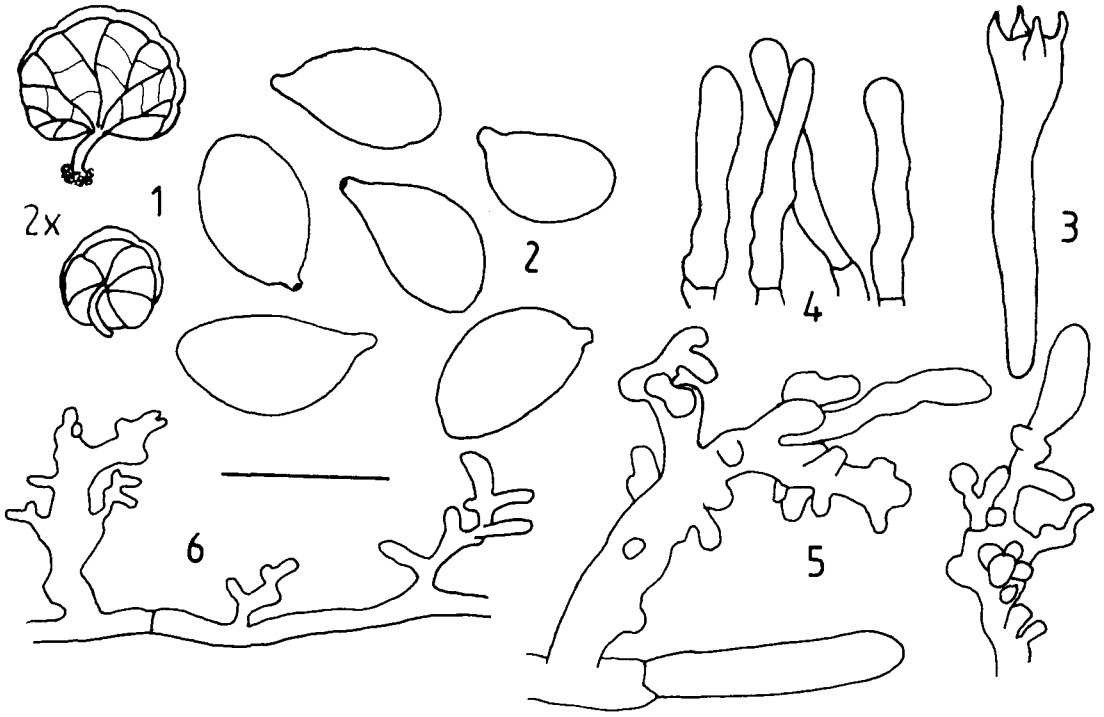

Fig. 1 *C. fimbriata.* **1**, Basidiomes (2×); **2**, spores; **3**, basidium; **4**, cheilocystidia; **5**, pileipellis elements; **6**, caulocystidia.

structuram Ramealem. Stipitis cortex ex hyphis parallelis –3 µm diam., cum caulocystidiis nodulosis, diverticulatis, simplicioribus quam pilei. Gregarie in culmis bambusae mortuae, *Pseudosasa japonica* (Steudel) Nakai, in horto suburbano. Nova-zelandia.

HOLOTYPUS: PDD 60260.

Pileus 3–10 mm diam., sub-orbicular to reniform, drab, smooth and translucent when wet, drying white, pubescent, surface tessellate, following the outline of the lamellae, margin conspicuously inrolled, even. Hymenophore whitish, drying apricot to orange-yellow, with 6–8 main lamellae attached to the stipe, thick and fold-like, forked, larger basidiomes having interconnecting cross veins, usually at a lower level than the main veins. Stipe very short, 2–3 × 1 mm, fawn, central or excentric, usually geotropically curved, fibrous, surface fibrillose, sometimes attached to the substrate with a dark pad of mycelium, connecting to white rhizomorphs on the substratum. Smell slightly of ammonia, taste unknown. Spore print unknown.

Spores 8.5–12.0 × 6–7 (9.0 × 6.2) µm, Q = 1.4, broadly ellipsoid to ovate in frontal view, in lateral view often flattened on the adaxial side and bulging on the abaxial side, hyaline, inamyloid, not dextrinoid, acyanophilic, thin-walled. Basidia 25–35 × 4–7 µm, clavate, 4-spored, sterigmata 3–5 µm. Cheilocystidia 30–60 × 4–8 µm, cylindric, sometimes slightly flexuous or narrowly clavate, hyaline, thin-walled, forming a sterile, lamellar margin. Pleurocystidia absent. Trama of narrow (2–3 µm) hyphae hyaline, glassy, with gelatinised walls, subregular. Subhymenium scarcely distinguishable, of narrow, gelatinised hyphae. Context of narrow (2–4 µm) hyphae, interwoven, more strongly gelatinised than the trama. Pileipellis of repent hyphae, –5 µm diam., with upstanding, strongly nodulose, diverticulate hyphae forming a Rameales structure. Stipe cortex of parallel hyphae –3 µm diam. with nodulose, diverticulate caulocystidia less complex than those on the pileus.

HABITAT: Gregarious on dead culms of *Pseudosasa japonica* (Steudel) Nakai (bamboo), in suburban garden.

MATERIAL: New Zealand; North I.: Auckland: Mt Eden, 16a Landscape Rd., *B. P. Segedin*, 4 ii 1989, PDD 60260 (holotypus).

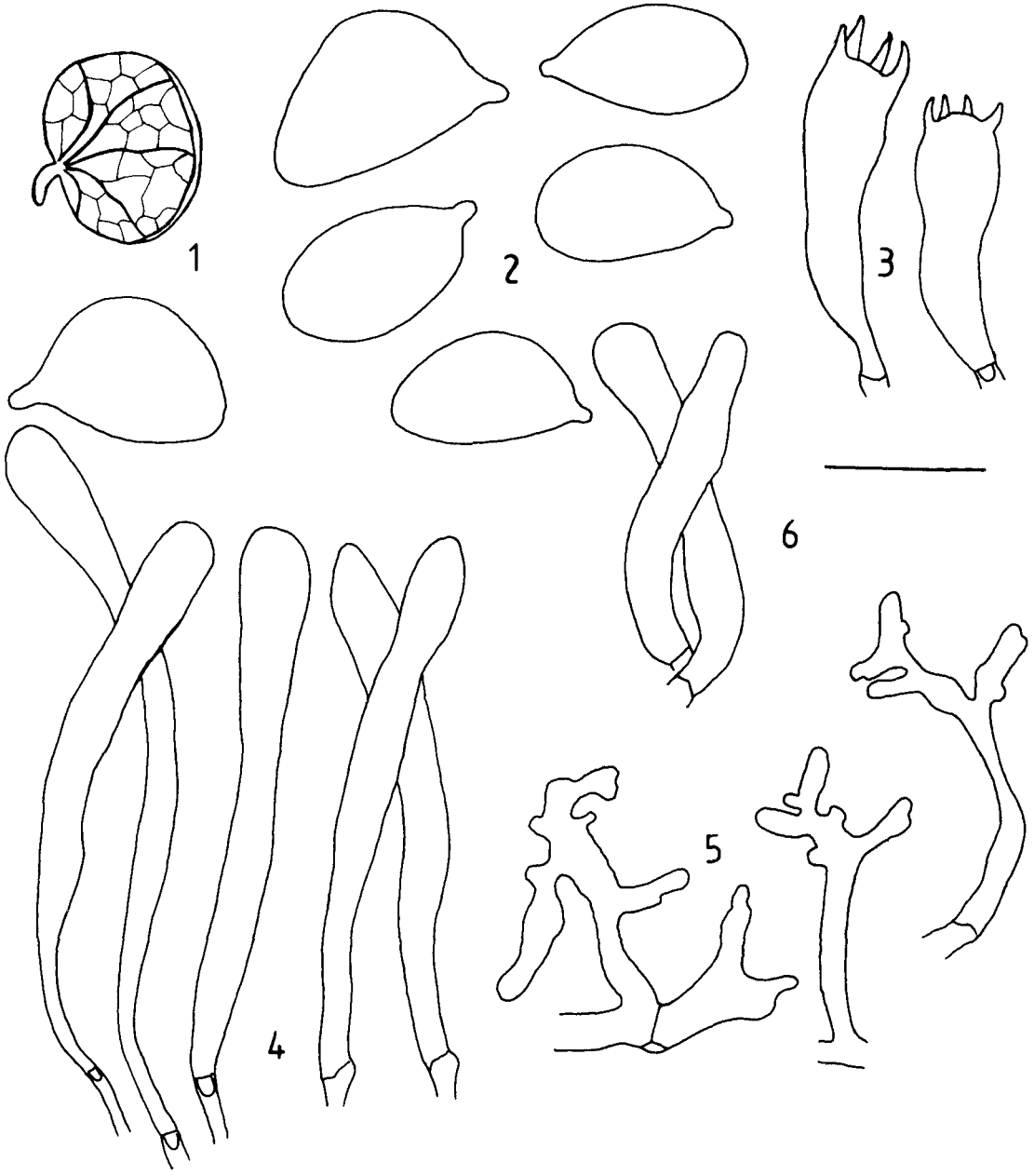

Fig. 2 *C. rubescens.* **1**, Basidiomes (2×); **2**, spores; **3**, basidia; **4**, cheilocystidia; **5**, pileipellis elements; **6**, caulocystidia.

ETYMOLOGY: The name reflects the finely fimbriate margin of the lamellae when examined with a hand lens.

Several species of *Campanella* have been described from bamboos in other parts of the world. Since bamboos are not represented in the indigenous flora of New Zealand, it would seem likely that this fungus could also have been introduced. However, it does not seem to fit the descriptions of any of the species that have been described so far from bamboos in other countries. *C. cucullata* (Jungh.) Lloyd (syn.

C. junghuhnia (Mont.) Sing.), often but not always on bamboo, has a white, thin-fleshed and dorsally attached basidiome, with inconspicuous cystidia. The species recorded in Japan (Imazeki et al. 1988) as *C. junghuhnia* is white, translucent, and dorsally attached. *C. cucullata* has been described many times from various countries: Japan, Philippines, Samoa, Australia, and E. Africa (Parmasto 1981). There is some confusion in the literature about this species, particularly in regard to the size of the spores, and some workers believe *C. cucullata* and *C. junghuhnia* are either not synonymous or another species is involved (Pegler 1977; Parmasto 1981). *C. aeruginea*, common on bamboo in the Neotropics (Guzman & Guzman-Davalos 1985), is also estipitate, white turning glaucous, and has ampullaceous cystidia. *C. castaneipes* Sing. has a chestnut-coloured stipe with conspicuously thick-walled caulocystidia. *Tetrapyrgos austrochilensis* (Sing.) Horak, *T. peullensis* (Sing.) Horak (Singer 1969), and the related species *T. alba* (Berk. & Curt.) Horak also occur on bamboo but have triangular to star-shaped spores.

Campanella rubescens sp. nov. Fig. 2

Basidioma 12 × 9 mm diam., orbiculare vel reniforme, carnosum, fragile, substrato facile separatum, stipitatum. Pileus subroseo-cremeus, rubescens in aetate, gelatinosus, superficie viscida et tessellata secundum imaginem lamellarum. Hymenophorum primo album vel subroseo-bubalinum, deinde coccineum vel ferrugineum, inquinatum primo ad margines lamellarum longarum, valde intervenosum, paucis (3–5) lamellis longis ad stipitem pervenientibus, inter quas lamellae secundariae inferius anastomosantes. Lamellarum margines exsiccatantes exsudant substantiam rubram et gelatinosam. Stipes 2 × 1 mm, excentricus vel praecipue lateralis, cylindricus, solidus, roseus, pubescens. Odor et sapor incogniti. Imago sporarum alba, copiosa. Sporae 10.5–14.5 × 6.5–9.0 (13 × 7.5) µm, Q = 1.73, ellipticae aspectu frontali, aspectu laterali complanatae in latere adaxiali, saepe conspicue gibbosae in abaxiali latere, hyalinae, inamyloideae nec dextrinoideae, parietibus tenuibus, nonnumquam globulis refractivis internis; succus atro-rubescens in aetate. Basidia 35–45 × 5–12 µm, anguste clavata, tetraspora, sterigmatibus –6 µm, succo flavo, granuloso in juventute. Cheilocystidia 70–100 × 3–9 µm, cylindrica vel anguste clavata, conferta, marginem latam sterilem lamellarum facientia, tenuibus parietibus, succo rubescenti in aetate. Pleurocystidia nulla, sed adsunt nonnulla basidiola fusiformia. Trama irregularis, gelatinosa, nonnullis angustis hyphis oleiferis. Contextus subgelatinosus, ex angustis (3–5 µm) hyphis laxe intertextis et conspicue fibulatis; nonnullae angustae oleiferae hyphae terminant in pileipelle cellulis clavatis roseam substantiam continentibus. Pileipellis ex hyphis repentibus hyphas diverticulatas angustas laxe Rameales producentibus. Caulocystidia 40–50 × 6–8 µm, cylindrica vel subclavata, frequentia, cheilocystidiis simillima. In frondibus mortuis palmae (*Rhopalostylis sapida*). Nova-zelandia

HOLOTYPUS: PDD 60261.

Basidiome 12 × 9 mm diam., orbicular to reniform, fleshy, fragile, easily detached from substratum, stipitate. Pileus pinkish cream, "chamois to cinnamon buff", becoming red with age, gelatinous, surface viscid, tessellate corresponding with lamellae. Hymenophore white to pinkish buff at first but becoming crimson to rusty red, "orange cinnamon to mikado brown, deep corinthian red to acajou red" (colours in quotation marks from Ridgway (1912), fide R. H. Petersen pers. comm.), staining appearing first at the margins of the long lamellae, strongly intervenose, with a small number (3–5) of long lamellae reaching the stipe, and between them secondary lamellae anastomosing at a lower level. During drying, the margins of lamellae exude a sticky-looking red substance. Stipe 2 × 1 mm, excentric to mainly lateral, cylindric, solid, pink, pubescent. Smell and taste unknown. Spore print white, copious.

Spores 10.5–14.5 × 6.5–9.0 (13.0 × 7.5) µm, Q = 1.73, elliptical in face view, flattened on adaxial side and often conspicuously humped on abaxial side in lateral view, hyaline, inamyloid, not dextrinoid, acyanophilic, thin-walled, some with refractive globules; contents of spores discolour ferruginous red with age. Basidia 35–45 × 5–12 µm, elongate-clavate, with 4 sterigmata.up to 6 µm long, contents yellow granular when young. Cheilocystidia 70–100 × 3–9 µm, cylindrical to narrowly clavate, thin-walled, contents becoming reddish with age, or sometimes with red material forming a cap, crowded, forming a wide, sterile, lamellar margin. Pleurocystidia none but some fusoid basidioles present. Trama irregular, gelatinised, some narrow, oleiferous hyphae present. Context subgelatinous, of narrow (3–5 µm) hyphae, loosely woven with very distinct clamp connections; some narrow, oleiferous hyphae ending in the pileipellis as clavate cells with pink contents. Pileipellis of repent hyphae giving rise to narrow diverticulate hyphae in a loose Rameales structure. Caulocystidia 40–50 × 6–8 µm, cylindrical to slightly clavate, frequent, very similar to cheilocystidia.

HABITAT: On decaying nikau palm fronds (*Rhopalostylis sapida* Wendl. & Drude, an indigenous palm), in mixed podocarp dicotyledonous forest.

MATERIAL: Sri Lanka: Central Prov., Kandy District, Peradeniya, *Thwaites* 396, Aug. 1868 (holotype *C. pustulata*, K); New Zealand: North I.: Auckland: Waitakere Ra.: Swanson University

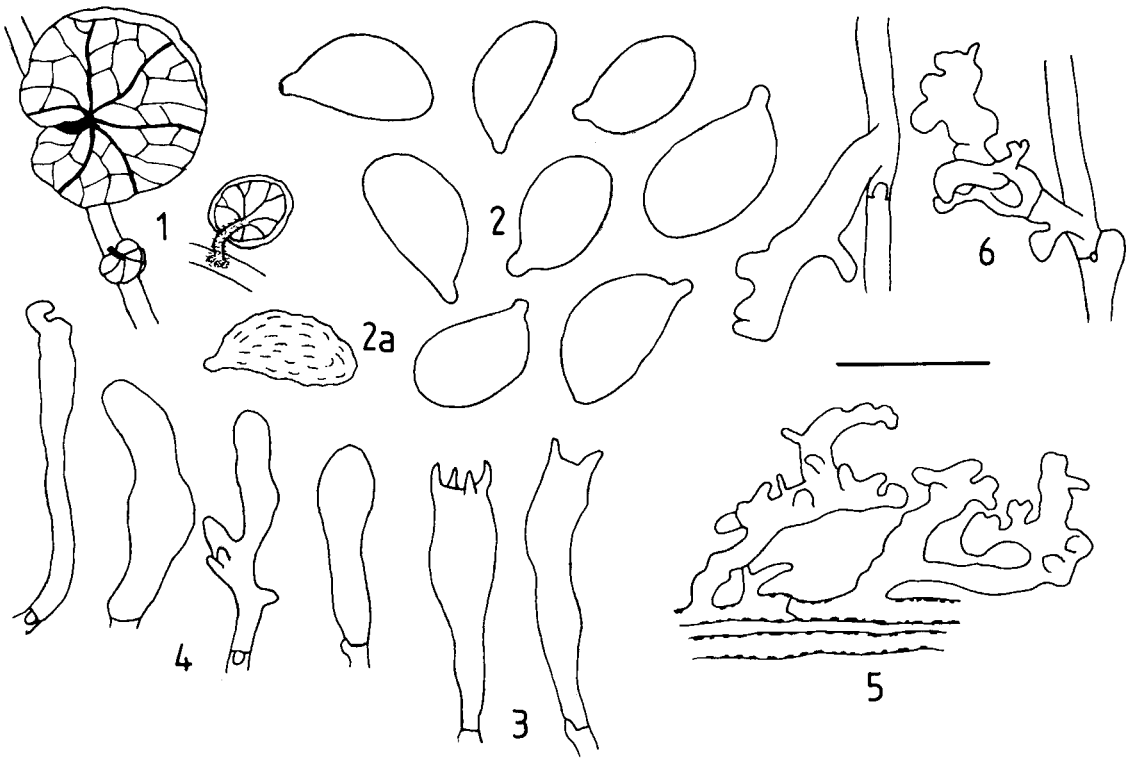

Fig. 3 *C. tristis.* **1**, Basidiomes (PDD 60254); **2**, spores; **2a**, a shrunken spore of *C. tristis* (PDD 60254); **3**, basidia (PDD 29267); **4**, cheilocystidia (PDD 60254); **5**, pileipellis elements (PDD 60256); **6**, caulocystidia (PDD 61125).

Reserve, *P. Warren*, 12 vi 1978, PDD 60261 (holotype *C. rubescens*); Ibid., Farley Tr., *R. H. Petersen*, 22 v 1990, Petersen 2687.

This species bears a striking resemblance to *C. pustulata* (Berk.& Br.) Pegler, another red-staining species, first recorded by Berkeley & Broome (1873) growing on decaying palm fronds in Sri Lanka, and described again by Petch (1910) and Pegler (1986), also from Sri Lanka. Cooke (1892) recorded it for Australia but Petch (1910) stated that "Cooke's figure in the Handbook of Australian fungi"(which shows a very small *Campanella*-like fungus entirely ochraceous in colour) "has no relation to this plant at all", a view subscribed to by Lloyd (1919). The New Zealand species is like the Sri Lankan in certain respects such as the substratum, the colour changes of the basidiomes, the similar appearance of the extruded, glutinous substance from the lamellar margin in dried material, and the ferruginous staining character of the spores and cheilocystidia, but it differs in that the basidiomes are considerably larger than those in the Sri Lankan type material examined and are laterally stipitate instead of being attached by a pseudostipe (Pegler 1986), and the cheilocystidia are longer and narrower than those figured by Pegler. Pegler did not report caulocystidia or oleiferous hyphae in *C. pustulata*. It was difficult to identify the tissues of the type with any precision because of the small amount and size of the material available, but the spores of *C. pustulata* appear to be similar in size but slightly more spherical (Q = 1.3 instead of 1.7) than those of *C. rubescens*. On the basis of the large spore size, both these species would fit in Singer's (1975) subsection Gigantosporae, type species *C. gigantospora* Singer from Australia, but neither species has the diverticulate to somewhat thick-walled cystidia that were confirmed from an examination of the type of *C. gigantospora*.

C. rubescens appears to be fairly common in New Zealand, on decaying fronds of the indigenous nikau palm (R. H. Petersen pers. comm.). The red staining of the basidiome is a very distinctive character, making it easy to recognise.

***Campanella tristis* (Stevenson)** Segedin comb. nov. Fig. 3

≡ *Resupinatus tristis* Stevenson, *Kew Bull. 19*: 23, 1964.
≡ *Marasmiellus tristis* (Stevenson) Horak, *N. Z. J. Bot. 9*: 458, 1971.
= *Resupinatus dorotheae* Stevenson, *Kew Bull. 19*: 23, 1964.
≡ *Delicatula dorotheae* (Stevenson) Horak, *N. Z. J. Bot. 9*: 417, 1971.

Description based on the type material, together with additional information from further collections

Pileus 4–30 mm diam., semi-orbicular to reniform, surface drab white, cream or pale grey, turning glaucous or greenish-grey and finally black with age, drying buff to ochraceous, moist, flabby to gelatinous in texture, translucent when wet, floccose when dry, surface tessellate, following outline of lamellae, margin inrolled. Hymenophore of well-spaced lamellae, simple or intervenose, white, becoming dingy, staining verdigris, greenish or black when aged, drying chrome. Lamellae attached to slightly decurrent when stipe obvious, thin, simple, in one series in smaller basidiomes, forking or strongly intervenose in larger ones, cross-veining usually slightly below the level of the radiating main veins. Stipe 2–3 × 1 mm, lateral or excentric, fibrous, downy fibrillose, straight or more often geotropically curved, even, sometimes attached to the substratum by pad of mycelium. Spore print white. Smell none, taste unknown.

Spores 8.0–10.5 × 5.5–7.0 (8.5 × 6.0) µm, Q = 1.4, somewhat variable in shape and size, broadly ellipsoid to humped on the abaxial side, hyaline, inamyloid, not dextrinoid, acyanophilic, thin-walled, sometimes with one large guttule or many, apiculus broad. Spores appear to shrivel easily developing the longitudinal ridges depicted by Stevenson (1964) for *R. dorotheae*. Basidia 20–35 × 5–10 µm, clavate, with 4 sterigmata 4.5 µm long. Cheilocystidia on the lamellar margin 30–40 × 3–4 µm, versiform but basically clavate, sometimes with various short protuberances, in clusters of 3–6 but not very plentiful. Pleurocystidia absent. Trama of hyaline, strongly gelatinised, interwoven hyphae up to 4 µm diam., with conspicuous, medallion clamp connections. Subhymenium narrow, of closely interwoven hyphae, somewhat gelatinised. Context of thin, gelatinised, interwoven hyphae like the trama. Pileipellis an indistinct cutis of irregularly arranged, repent, sometimes faintly encrusted hyphae giving rise to curving, erect, diverticulate hyphae in a Rameales to asterostromelloid structure, hyaline to stramineous in colour, sometimes with resinous incrustations to which spores readily cling. Subpellis faintly yellow in KOH. Stipe cortex of narrow (2 µm diam.) hyphae producing numerous caulocystidia of Rameales structure, golden brown in ammonia. Chemical reactions: KOH on pileus gives a brownish colour, phenol gives a darker than natural verdigris tinge.

HABITAT: Caespitose and gregarious on dead wood of the indigenous species *Beilschmiedia tawa* (A. Cunn.) Benth. & Hook. f. ex Kirk (tawa), *Geniostoma ligustrifolium* A. Cunn. (hangehange), *Rhipogonum scandens* J. R. & G. Forst. (supplejack), *Kunzea ericoides* (A. Rich.) J. Thompson (kanuka), *Freycinetia baueriana* Endl. ssp. *banksii* (A. Cunn.) Stone (kiekie), in mixed podocarp-dicotyledonous forest.

MATERIAL: New Zealand: North I.:Wellington: Levin, *G. Stevenson*, 15 xi 1958, Stevenson 1431 (holotype K); Auckland: Waitakere Ra., Piha Valley Tr., *J. M. Dingley*, 10 vi 1971, PDD 29267; Hunua Ra., Cosseys Tr., *B. P. Segedin, G. M. Taylor*, 18 xi 73, PDD 60259; N. Auckland: Waipoua Forest, *G. M. Taylor, B. P. Segedin*, 6 v 1975, PDD 60254; Auckland: Waitakere Ra., Cascades Reserve Kauri Tr., *B. P. Segedin*, 26 iv 1977, PDD 60255; *T. Yokoyama*, 25 iv 1978, PDD 60256; La Trobe Tr., *B. P. Segedin*, 15 iv 1979, PDD 60257; Maungaroa Ridge Tr., *B. P. Segedin*, 21 ii 1981, PDD 60258.

This species has strong affinities with the fungi described in Singer's subsection Aerugineae (Singer 1975), which are either always glaucous in colour or become so with age. It is very close to the South American species *C. aeruginea* Sing. (Singer 1975), differing in having basically clavate rather than ampullaceous cheilocystidia and not being confined to monocotyledonous hosts. Singer stated that *C. aeruginea* has no stipe or pseudostipe, but many specimens of *C. tristis* are estipitate with age. *C. aberrans* Sing., also from South America (Singer 1975), differs in being permanently glaucous and having no cystidia. *C. merulina* (Pers.) Sing. has been described both by Singer (1975), from South America and by Guzman & Guzman-Davalos (1985), from Mexico, and although their accounts differ in some respects, both agree about small size of the spores (7–8 × 3–6 µm) and capitate cheilocystidia. Another species belonging to this group, *C. caesia* Romagnesi (Romagnesi 1980), has a very

Fig. 4 *C. vinosolivida.* **1**, Basidiomes; **2**, spores; **3**, basidia; **4**, cheilocystidia; **5**, pileipellis elements.

small, sessile, glaucous basidiome on herbaceous hosts and is possibly the same as *C. merulina* (Singer 1986).

Campanella vinosolivida sp. nov. Fig. 4

Basidioma conchatum vel orbiculare, sessile, affixum dorsaliter et saepe excentrice, gelatinosum ubi novum, durum et corneum ubi aridum. Pileus 3–30 mm diam., convexus, vinosolividus (12C4), brunneolus ubi aridus (5E3), floccosus in superficie, margine plana et tenui. Hymenophorum concolorum, favoloideum in regione centrali vel excentrica, ex qua radiant quattuordecim vel pauciores lamellae, intervenientibus duobus vel tribus seriebus lamellularum confertarum, connexae paulo inferius permultis lamellis transversis; lamellae parum angustae et tenues. Caro gelatinosa. Odor et sapor ignoti. Sporarum imago alba. Sporae 6.0–7.0 × 3.5–4.0 (6.0 × 3.6) µm, Q = 1.6, ellipticae-oblongae, nonnumquam parum ovoideae, paene eadem magnitudine, hyalinae, inamyloideae, nec dextrinoideae nec cyanophilae, parietibus tenuibus, apiculo minimo. Basidia 15–17 × 4–5 µm, clavata, sterigmatibus longis quattuor. Cheilocystidia 18–25 × 4–5 µm, versiformia, hyalina, parietibus tenuibus, sinuato-cylindrica vel ventricosa, omnia diverticulata vel nodulosa ad apicem, marginem sterilem formantia. Trama ex hyphis angustis (2–4 µm diam.), aliquantum gelatinatis, connexa manifestis fibulis medalliformibus, intertextis vel subparallelis. Subhymenium similiter gelatinatum, perangustum, vix distinguibile. Contextus ex hyphis fortissime gelatinatis, angustissimis; sed nonnullae latiores sunt (–5 µm.diam.) et velut oleum flavum continent. Pileipellis ex hyphis angustis (–4 µm diam.), cum pigmento flavo plasmatico ex quibus excrescunt partes arrectae diverticulatae vel asterostromelloideae. Gregarie in silva in ramis mortuis. Novazelandia

HOLOTYPUS: PDD 29270.

Basidiome conchate to orbicular, sessile, attached dorsally, centrically to excentrically, gelatinous when fresh, drying hard and horny. Pileus 3–30 mm diam., convex, livid vinaceus (12C4) drying light greyish-brown (5E3), surface floccose especially when dry, margin even, thin. Hymenophore concolorous, favoloid in the centric to excentric middle region (depending on point of attachment) from which up to 14 main lamellae radiate, separated by 2–3 series of crowded lamellulae, all connected by very frequent cross-veining at a somewhat lower level. Lamellae fairly narrow and relatively thin. Flesh gelatinous. Smell and taste unknown. Spore print pure white.

Spores 6.0–7.0 × 3.5–4.0 (6.0 × 3.6) µm, Q = 1.6, elliptic-oblong, sometimes slightly ovoid, fairly uniform in size, hyaline, inamyloid, not dextrinoid or cyanophilic, thin-walled, with a very small apiculus. Basidia 15–17 × 4–5 µm, clavate, with 4 long (–6 µm) sterigmata. Cheilocystidia 18–25 × 4–5 µm, hyaline, thin-walled, sinuato-cylindric to ventricose, all apically diverticulate to nodulose, forming a sterile margin. Pleurocystidia absent. Trama of narrow (2–4 µm diam.), moderately gelatinised hyphae with conspicuous medallion clamp connections, interwoven to subparallel. Subhymenium similarly gelatinised, very narrow and not easily distinguished. Context of very strongly gelatinised, extremely narrow hyphae, with some broader ones (–5 µm diam.) with oily yellow contents. Pileipellis of narrow (–4 µm diam.) hyphae with yellow (in KOH) plasmatic pigment, giving rise to erect, diverticulate to well-developed asterostromelloid elements.

HABITAT: Gregarious on fallen wood of unknown species in indigenous podocarp-dicotyledonous forest.

MATERIAL: New Zealand: North I.: Auckland: Waitakere Ra., Laingholm, *D. W. Dye*, 9 v 1971, PDD 29270 (holotypus, icon.); Mill Bay, *J. M. Dingley*, 23 vi 1976, PDD 60265; Titirangi, *S. M. Hasnain*, iv 1980, PDD 60262; *B. P. Segedin*, 11 vi 1983, PDD 60263.

ETYMOLOGY: The name reflects the colour of fresh basidiomes.

The colour and morphology and the small spores of this species indicate affinities with *C. purpureobrunnea* Petch from Sri Lanka, and *C. boninensis* (s. Ito & Imai) Parmasto from Japan and CIS (formerly USSR) (Petch 1926; Parmasto 1981; Pegler 1986). It differs from them, however, in having well-developed cystidia, more elliptical spores and more complex pileipellis elements. Superficially *C. vinosolivida* could be confused with the New Zealand species *Marasmiellus violaceogriseus* (Stevenson) Horak both in colour and habit but can be distinguished by having almost favoloid lamellae in the middle of the hymenophore, conspicuous interveining between the outer lamellae and a straight margin, whereas *M. violaceogriseus* has no interveining and a strongly inrolled margin, at least in early stages.

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