

## Type studies of the species of *Odontia* described by GH Cunningham

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(Received 24 November 2011; final version received 13 March 2012)

Five species of *Odontia* described by G.H. Cunningham are studied and reclassified or synonymized: *Odontia flexibilis* (≡ *Hypochnicium flexibile* comb. nov.); *O. fragilis* (≡ *Phlebia fragilis* comb. nov.); *O. novae-zealandiae* (≡ *Hypochnicium novae-zealandiae* comb. nov.); *O. oleifera* (= *Dentipellis leptodon*); and *O. stratos* (≡ *Hyphodontia novozelandica* nom. nov.). Comments, descriptions and illustrations of these species are included. Accepted names are also provided for nine other species of *Odontia* described by GH Cunningham.

**Keywords:** *Amylocorticiellum*; corticioid fungi; *Mycoacia*; *Nodotia*; *Scopulodontia*; *Trechispora*; *Xylodon*; New Zealand

### Introduction

Gordon Herriot Cunningham (1892–1962) described 14 new species of *Odontia* in his paper entitled ‘Hydnaceae of New Zealand Part II. The genus *Odontia*’ in 1959. In the same paper, he also proposed two combinations in *Odontia*: *Odontia calcarea* (Cooke & Massee) G. Cunn. (≡ *Pseudolagarobasidium calcareum* (Cooke & Massee) Sheng H. Wu) and *Odontia subfascicularis* (Wakef.) G. Cunn. (≡ *Phlebia subfascicularis* (Wakef.) Nakasone & Gilb.). *Odontia* Pers. 1794 was typified by *Odontia ferruginea* Pers. (= *Tomentella crinalis* (Fr.) M.J. Larsen) and was proposed as a nom. rej. to conserve *Tomentella* Pers. ex Pat. 1887 (Jülich 1983).

Nine of Cunningham’s new species in *Odontia* have been earlier transferred to other genera or synonymized under previously described species, as detailed below. For the present study, we examined the remaining five new species (*O. flexibilis*, *O. fragilis*,

*O. novae-zealandiae*, *O. oleifera* and *O. stratos*). Our work complements studies by Stalpers (1985) and Stalpers & Buchanan (1991) who examined types published by Cunningham in *Corticium* Pers., *Pellicularia* Cooke and *Peniophora* Cooke.

### Materials and methods

For light microscopy studies, samples were mounted in 3% potassium hydroxide (KOH), Melzer’s reagent (IKI) and 0.1% cotton blue in 60% lactic acid to determine cyanophily of basidiospores. Line drawings were made with a camera lucida attachment. Herbarium abbreviations follow Thiers (2012). Holotypes are deposited at PDD; other specimens studied are at SALA-Fungi, HUBO or the herbarium of the Centro de Investigación y Extensión Andino Patagónico (CIEFAP, Esquel, Argentina). Accepted names or proposed combinations are indicated in boldface type.

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**Taxonomy**

*Odontia capitata* G. Cunn., Trans. Roy. Soc. New Zealand 86: 74, 1959.

≡ *Hyphodontia cunninghamii* Gresl. & Rajchenb., Mycologia 92: 1157, 2000; non *Hyphodontia capitata* (Boidin & Gilles) Hjortstam, Mycotaxon 42: 151, 1991 (competing homonym).

≡ *Xylodon capitatus* (G. Cunn.) Hjortstam & Ryvarden, Syn. Fung. (Oslo) 226: 36, 2009.

TYPE SPECIMEN EXAMINED: NEW ZEALAND. Auckland, Moumoukai Valley, Hunua Range, 800 ft, Jan 1951, bark of dead branches of *Carpodetus serratus* J.R. Forst. & G. Forst. (Rousseaceae), leg. J.M. Dingley, PDD 17828.

*Odontia capitata* belongs in *Hyphodontia* J. Erikss. s.l. Greslebin & Rajchenberg (2000) proposed the new name *Hyphodontia cunninghamii* because the epithet *capitata* was used in *Hyphodontia*. Hjortstam & Ryvarden (2009) made a combination in *Xylodon* (Pers.) Gray, an alternative generic placement for *O. capitata*. See comments in Discussion about taxonomy of *Hyphodontia* and *Xylodon*.

*Odontia columellifera* G. Cunn., Trans. Roy. Soc. New Zealand 86: 84, 1959.

≡ *Columnodontia columellifera* (G. Cunn.) Jülich, Persoonia 10: 327, 1979.

≡ *Mycoacia columellifera* (G. Cunn.) Hjortstam, Mycotaxon 54: 188, 1995.

≡ *Phlebia columellifera* (G. Cunn.) Duhem, Cryptogamie, Mycol. 30: 325, 2009.

*Odontia columellifera* is characterized by a hydroid hymenophore with the trama of the aculei densely encrusted with columns of crystals. For descriptions and illustrations see Cunningham (1959) and Duhem (2009).

*Odontia flexibilis* G. Cunn., Trans. Roy. Soc. New Zealand 86: 99, 1959. (Fig. 1)

≡ *Hypochnicium flexibile* (G. Cunn.) Gorjón & Gresl., comb. nov.

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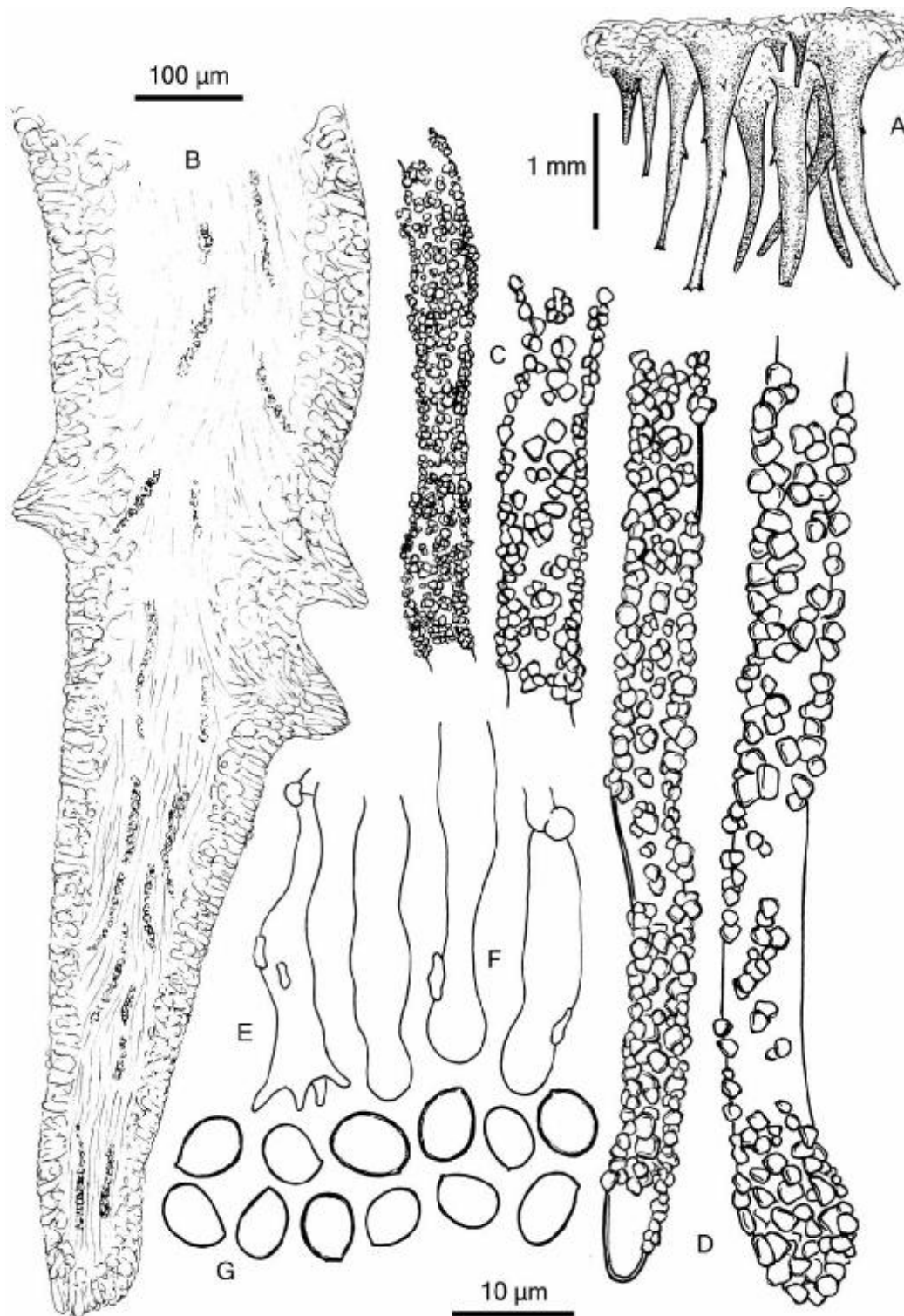
TYPE SPECIMEN EXAMINED: *Odontia flexibilis*: NEW ZEALAND. Wellington, Lake Papaetonga, 50 ft, May 1956, adnate on bark of dead stems of *Freycinetia banksii* A. Cunn. (Pandanaaceae), leg. G.H. Cunningham, PDD 17897.

Basidiome resupinate, effuse, hymenophore hydroid with aculei 1.5–2 mm long and c. 0.2 mm in diameter, with blunt to fimbriate apex and small lateral protuberances, pale brown to orange in herbarium material. Hyphal system monomitic or seemingly dimitic, generative hyphae thin-walled, hyphae in the trama of the aculei with thin- to thickened walls, encrusted with granular crystals, usually not projecting, some with skeletoid appearance, apex of the aculei formed by smooth or encrusted hyphae and basidia. Cystidiols with a hyphoid appearance and a subcapitate apex. Basidia cylindrical to clavate, 25–30 × 5–6 µm, with four stout sterigmata, often encrusted with irregular crystals, basally clamped, cyanophilous. Basidiospores broadly ellipsoid to subglobose, 5–7 × 4–5(–6) µm, with slightly thickened and refractive walls, smooth, cyanophilous, inamyloid, indextrinoid.

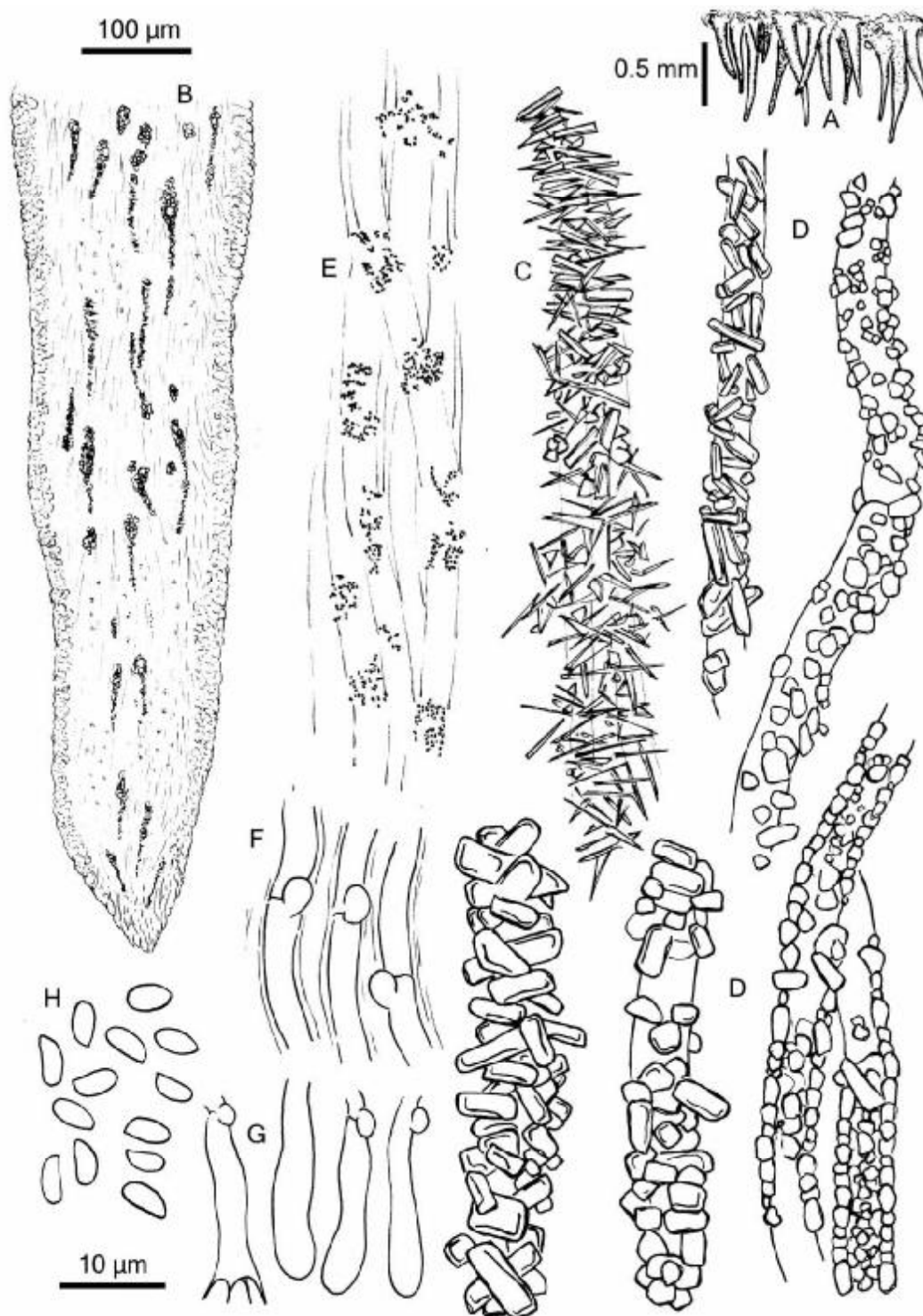
*Odontia flexibilis* is characterized by long aculei, encrusted hyphae and broadly ellipsoid to subglobose, thick-walled basidiospores. It is closely related to *Hypochnicium lydoniae* D.A. Reid which has larger basidiospores (7–10 × 5.5–7.5 µm) (Hjortstam & Ryvarden 2004).

*Odontia fragilis* G. Cunn., Trans. Roy. Soc. New Zealand 86: 100, 1959. (Fig. 2)

≡ *Phlebia fragilis* (G. Cunn.) Gorjón & Gresl., comb. nov.



**Figure 1** *Odontia flexibilis* ( $\equiv$  *Hypochnicium flexibile*) PDD 17897, holotype. **A**, Hymenophore. **B**, Section of the aculei. **C**, Encrusted hyphae. **D**, Encrusted hyphal ends with skeletoid appearance. **E**, Basidia. **F**, Cystidiols. **G**, Basidiospores.



**Figure 2** *Odontia fragilis* ( $\equiv$  *Phlebia fragilis*) PDD 17916, holotype. **A**, Hymenophore. **B**, Section of the aculei. **C**, Encrusted hyphae with acicular to acrose crystals. **D**, Encrusted hyphae with granular to rhomboidal crystals. **E**, Hyphae reacting in KOH with blackish round small granules. **F**, Clamped hyphae. **G**, Basidia. **H**, Basidiospores.

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TYPE SPECIMEN EXAMINED: NEW ZEALAND. Auckland, Cascade Park, Waitakeres, 750 ft, Apr 1954, on bark or decorticated wood of dead branches of *Beilschmiedia tawa* (A. Cunn.) Kirk (Lauraceae), leg. S.D. Baker, PDD 17916.

ADDITIONAL SPECIMENS EXAMINED: *Phlebia uda*: ITALY. Siena, Piancastagnaio, Mte. Amiata, 1000 m a.s.l., 18 Oct 2000, leg. & det. A. Bernicchia, conf. S.P. Gorjón, HUBO 7536; Ogliastro, Seui, Montarbu forest, 950 m a.s.l., 4 Dec 2000, leg. & det. A. Bernicchia, conf. K.-H. Larsson, HUBO 7369. SPAIN. Salamanca, Garcibuey, 640 m a.s.l., on *Quercus ilex* L. (Fagaceae), 25 Nov 2007, leg. & det. S.P. Gorjón, SALA-Fungi 3297. *Phlebia fuscoatra*: ITALY. Forlì-cesena, Sasso Fratino Reserve, 700 m a.s.l., 9 Oct 2003, leg. & det. A. Bernicchia, conf. S.P. Gorjón, HUBO 7764; Ogliastro, Montarbu Forest, 800 m a.s.l., 3 Dec 2007, leg. & det. A. Bernicchia, HUBO 8104. SPAIN. Salamanca, Madroñal, 650 m a.s.l., on *Quercus pyrenaica* Willd., 11 Nov 2006, leg. & det. S.P. Gorjón, SALA-Fungi 3295.

Basidiome resupinate, effuse, ceraceous, hymenophore hydroid with conical aculei 0.5–0.8(–1) mm long and c. 0.1–0.2 mm in diam., with acute not fimbriate apex, orange to reddish-brown in herbarium material, not changing in KOH. Hyphal system monomitic, hyphae with clamps, thin-walled, hyphae in the trama conspicuously encrusted with variable granular, rhomboidal or acerose crystals, not protruding in the apex or aculei flanks. Blackish small granules associated with the hyphae appearing after a few minutes in KOH. Cystidia absent. Basidia clavate, 15–20 × 3–4 µm, with four sterigmata, and a basal clamp. Basidiospores subcylindrical to narrowly ellipsoid, some slightly curved, 4–5 × 2–2.5(–2.8) µm, smooth, thin-walled, inamyloid, indextrinoid, acyanophilous.

*Odontia fragilis* is clearly related to the hydroid species of *Phlebia* Fr. by its ceraceous basidiome, hydroid hymenophore and small subcylindrical basidiospores. The core of the

aculei is composed of thin-walled hyphae encrusted with acerose and large granular to rhomboidal crystals. Aculei observed in KOH have a yellowish colour, and after a few minutes in this medium, hyphae are covered by aggregates of minute, round, brown to black granules. *Odontia fragilis* is reminiscent of *Phlebia uda* (Fr.) Nakasone and *Phlebia fuscoatra* (Fr.) Nakasone, but *O. fragilis* lacks cystidial elements. In Cunningham's original description, projecting cylindrical hyphoid cystidia with obtuse apices were illustrated, but we did not observe these structures. *Mycoacia brunneofusca* Hjortstam & Ryvarden and *M. austro-occidentalis* Canf. may be related to *O. fragilis* because they have subcylindrical basidiospores and lack cystidia.

*Odontia lutea* G. Cunn., Trans. Roy. Soc. New Zealand 86: 82, 1959.

≡ *Columnodontia lutea* (G. Cunn.) Jülich, Persoonia 10: 327, 1979.

≡ *Mycoacia lutea* (G. Cunn.) Hjortstam, Mycotaxon 54: 188, 1995.

≡ *Phlebia cunninghamiana* Duhem, Cryptogamie, Mycol. 30: 325, 2009.

*Odontia lutea* is closely related to *O. columellifera* which also has aculei with a column of crystals, but the latter species differs by its smaller aculei and light yellow hymenial surface. *Phlebia lutea* was preoccupied by *Phlebia lutea* (Jülich) Sheng H. Wu introduced as a new combination of *Resinicium luteum* Jülich, and the new name *Phlebia cunninghamiana* was proposed by Duhem (2009). For descriptions and illustrations see Cunningham (1959) and Duhem (2009).

*Odontia nothofagi* G. Cunn., Trans. Roy. Soc. New Zealand 86: 88, 1959.

≡ *Mycoacia nothofagi* (G. Cunn.) Ryvarden, in Hjortstam et al., Nova Hedwigia 34: 534, 1981.

≡ *Phlebia nothofagi* (G. Cunn.) Nakasone, Sydowia 49: 67, 1997.

*Odontia nothofagi* is a well known species widely distributed in North America, Europe, Asia, Australia, and New Zealand. For a description and illustration, see Nakasone (1997).

*Odontia novae-zealandiae* G. Cunn., Trans. Roy. Soc. New Zealand 86: 99, 1959. Fig. 3

≡ *Hypochnicium novae-zealandiae* (G. Cunn.) Gorjón & Gresl., comb. nov.

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TYPE SPECIMEN EXAMINED: *Odontia novae-zealandiae*: NEW ZEALAND. Auckland, Lake Rotoehu, 1200 ft, Oct 1955, on bark or decorticated wood of dead branches of *Beilschmiedia tawa*, leg. G.H. Cunningham, PDD 17968.

ADDITIONAL SPECIMENS EXAMINED: *Hypochnicium* (*Nodotia*) *gomezii*: BRAZIL, Piraquara, Morro do Canal, 12 Nov 2010, leg. J.M. Baltazar, coll. JMB 2309 (ICN, CIEFAP). *Odontia novae-zealandiae*. NEW ZEALAND. Auckland, Half Moon Bay, Ohau Stm Walk, 17 Nov 1999, leg. Richard Leschen, Coll. RL 487 (CIEFAP). *Hypochnicium* (*Gyrophanopsis*) *polonense* (Bres.) Å. Strid: ARGENTINA. Chubut, Los Alerces National Park, 530 m a.s.l. on *Nothofagus dombeyi* (Mirb.) Oerst. (Nothofagaceae), 3 May 2010, leg. & det. S.P. Gorjón, coll. 2691 (CIEFAP). *Hypochnicium* (*Gyrophanopsis*) *zealandicum* (G. Cunn.) Jülich: ARGENTINA, Neuquén, Nahuel Huapi National Park, Puerto Blest, on *Nothofagus dombeyi*, 30 May 2010, leg. & det. S.P. Gorjón, coll. 2942 (CIEFAP).

Basidiome resupinate, effuse, whitish to greyish, hymenial surface grandinoid to minutely odontoid, with very small aculei c. 0.1–0.2 mm and 0.05 mm in diameter, with fimbriate apices and flanks. Hyphal system monomitic, hyphae with clamps, thin-walled. Aculei formed by protuding hyphae encrusted in the apical part, a palisade of basidia and abundant crystalline

encrustation. Cystidia absent. Basidia cylindrical to clavate, 20–25 × 6–8 µm, with four stout sterigmata, basally clamped, cyanophilous. Basidiospores narrowly ellipsoid to subcylindrical, 7–8.5(–10) × 4–4.5(–6) µm, smooth, with slightly thickened and refractive walls, cyanophilous, inamyloid, indextrinoid.

*Odontia novae-zealandiae* belongs in *Hypochnicium* J. Erikss. because of its encrusted hyphae and thick-walled basidiospores. It differs from *H. lyndoniae* and *H. flexibile* by having narrowly ellipsoid basidiospores and a minutely grandinoid hymenophore. *Hypochnicium gomezii* Lopez & J.E. Wright, a species distributed in Argentina and Brazil, differs in having subglobose basidiospores and large aculei (Lopez & Wright 1985; Hjortstam & Ryvarden 2004).

*Odontia oblongispora* G. Cunn. [as '*oblongospora*'], Trans. Roy. Soc. New Zealand 86: 95, 1959.

≡ *Hypochniciellum oblongisporum* (G. Cunn.) Gresl. & Rajchenb., Mycotaxon 73: 14, 1999.

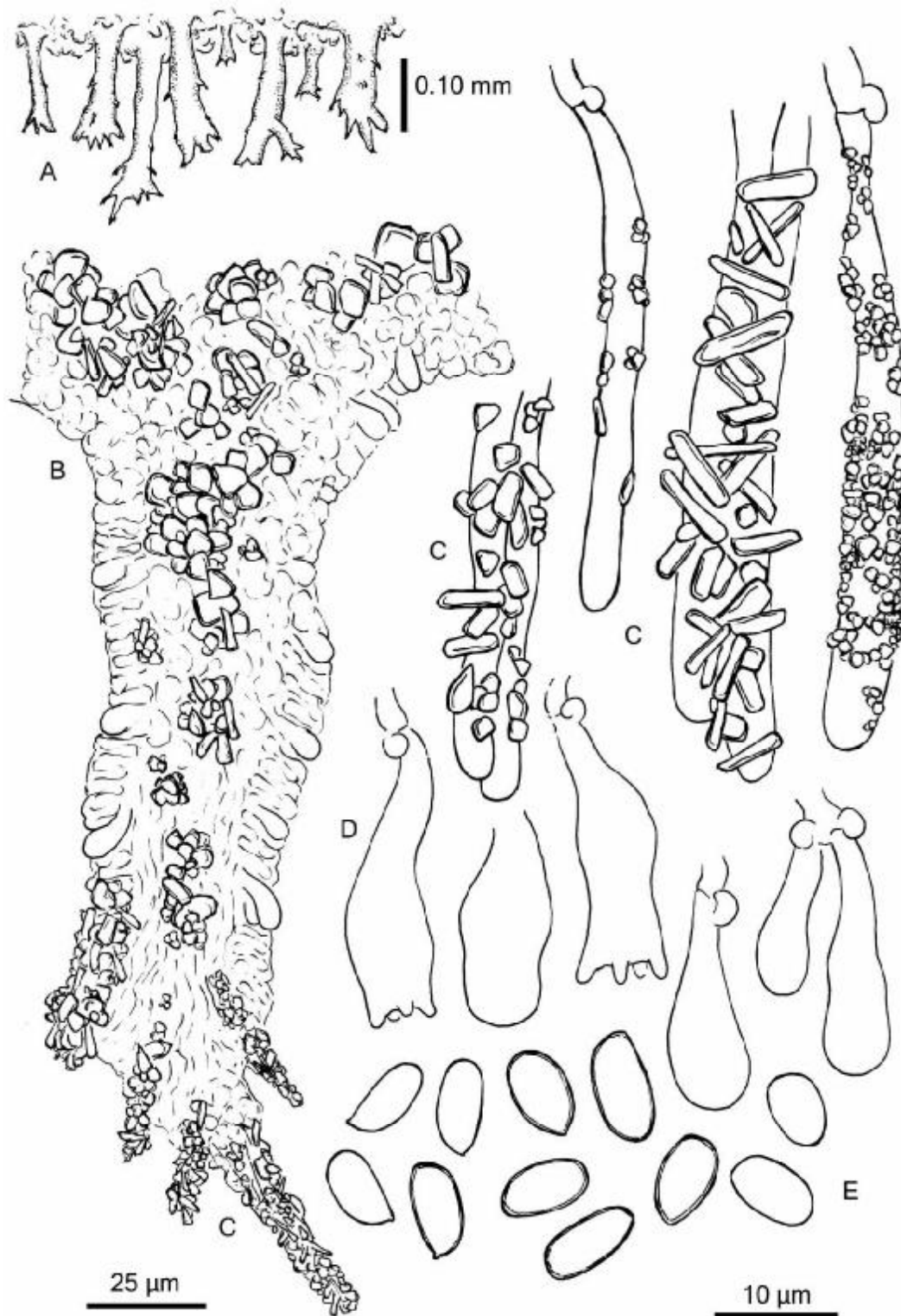
≡ *Amylocorticiellum oblongisporum* (G. Cunn.) Gorjón, Gresl. & Rajchenb., Mycotaxon 116: 290, 2011.

TYPE SPECIMEN EXAMINED: *Odontia oblongospora*: NEW ZEALAND. Auckland, Upper Piha Valley, Waitakeres, 900 ft, Aug 1953, on decayed decorticated wood of *Agathis australis* (D. Don) Loudon (Araucariaceae), leg. J.M. Dingley, PDD 17981.

*Odontia oblongispora* is characterized by an odontoid hymenophore and amyloid, thick-walled, smooth basidiospores. It was recently transferred to *Amylocorticiellum* by Gorjón et al. (2011).

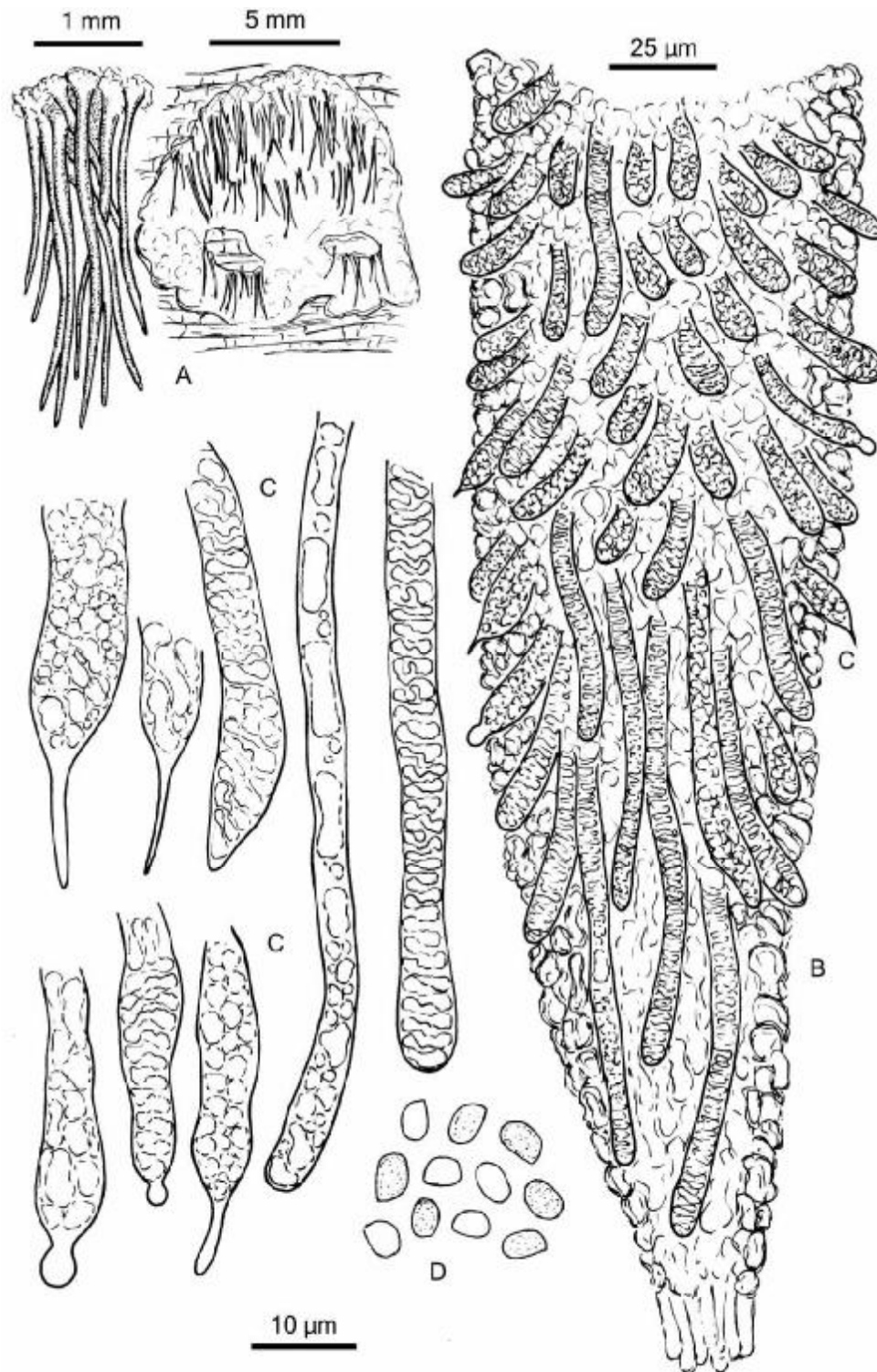
*Odontia oleifera* G. Cunn., Trans. Roy. Soc. New Zealand 86: 102, 1959. Fig. 4

= *Hydnum leptodon* Mont., Ann. Sci. Nat., Bot., sér. 2 20: 366, 1843.



**Figure 3** *Odontia novae-zealandiae* (≡ *Hypochnicium novae-zealandiae*) PDD 17968, holotype. A, Hymenophore. B, Section of the aculei. C, Projecting encrusted hyphae. D, Basidia. E, Basidiospores.





**Figure 4** *Odontia oleifera* (= *Dentipellis leptodon*) PDD 17901, holotype. A, Hymenophore. B, Section of the aculei. C, Gloeoplerous hyphae. D, Basidiospores.



≡ *Dentipellis leptodon* (Mont.) Maas Geest., Persoonia 7: 558, 1974.

= *Hydnum isidioides* Berk., Hooker's J. Bot. Kew Gard. Misc. 4: 58, 1845.

= *Hydnum separans* Peck, Annu. Rep. N.Y. St. Mus. 50: 112, 1897.

= *Odontia torrendii* Bres., Ann. Mycol. 18: 43, 1920.

= *Dentipellis subseparans* Khara & S.S. Rattan, Bibliotheca Mycol. 60: 100, 1977.

TYPE SPECIMEN EXAMINED: *Odontia oleifera*: NEW ZEALAND. Wellington, Totara reserve, Pohangina Valley, 250 ft, May 1956, on bark or decorticated wood of dead branches of *Beilschmiedia tawa*, leg. G.H. Cunningham, PDD 17901.

Basidiome resupinate, effuse, hymenophore hydroid with aculei 2–3 mm long and 0.1–0.2 mm in diameter, pale brown and with a felty appearance. Generative hyphae thin-walled, with clamps, gloeoporous hyphae, refractive in KOH. Aculei formed by gloeoporous hyphae and a palisade of collapsed basidia. Gloecystidia protruding slightly from the hymenial layer, with obtuse, acute or papillate apex. Basidia usually collapsed, not conspicuous, 15–25 × 4–5, with four sterigmata and a basal clamp. Basidiospores ellipsoid, 3.5–4(–4.2) × 2.5–3 µm, smooth in KOH, finely asperulate in Melzer's reagent, amyloid.

*Odontia oleifera* is characterized by long aculei, minutely asperulate, amyloid basidiospores and gloeoporous hyphae. It is conspecific with *Dentipellis leptodon*.

*Odontia stratosa* G. Cunn., Trans. Roy. Soc. New Zealand 86: 78, 1959. Fig. 5

≡ *Hyphodontia novozelandica* Gorjón & Gresl., nom. nov., non *Hyphodontia stratosa* Hjortstam & Ryvarden, Mycotaxon 64: 236, 1997 (competing homonym).

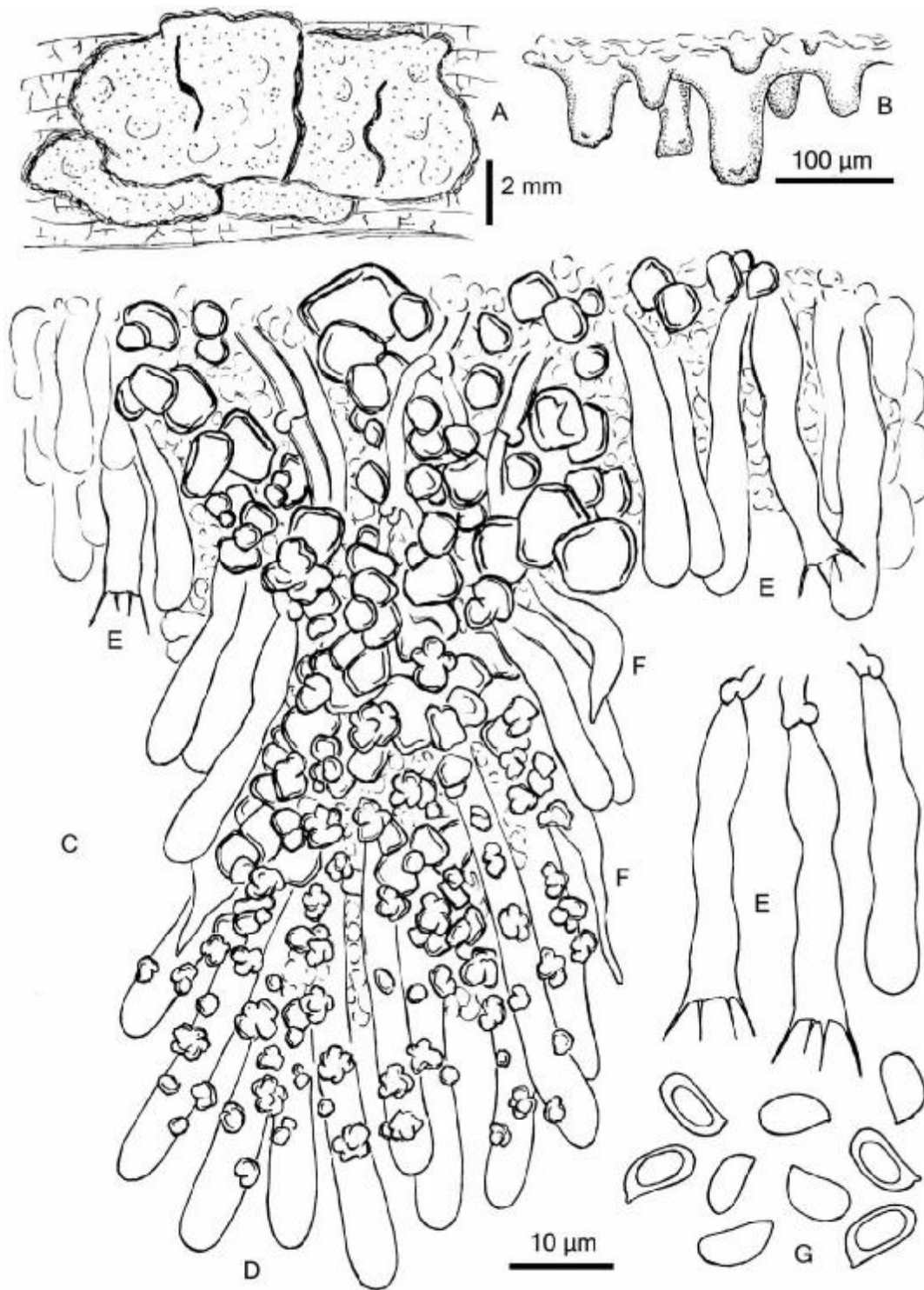
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TYPE SPECIMEN EXAMINED: *Odontia stratosa*: NEW ZEALAND. Wellington, Lake Papae-tonga, 50 ft, May 1956, on bark and decorticated wood of dead branches of *Macropiper excelsum* (G. Forst.) Miq. (Piperaceae), leg. G.H. Cunningham, PDD 18076.

ADDITIONAL SPECIMENS EXAMINED: *Hyphodontia (Xylodon) nespori*: ITALY. Livorno, Foresta 'Il Giardino', 27 Oct 1982, leg. & det. A. Bernicchia, conf. S.P. Gorjón, HUBO 957; Latina, Sabaudia, Circeo Nat. Park, 22–25 Oct 1984, leg. & det. L. Ryvarden coll. 22368 (HUBO). SPAIN. Salamanca, Mogarraz, 650 m a.s.l., on *Alnus glutinosa* (L.) Gaertn. (Betulaceae), 5 Nov 2006, leg. & det. S.P. Gorjón, SALA-Fungi 3158. *Hyphodontia (Xylodon) nesporina*: ARGENTINA. Chubut, Los Alerces National Park, 700 m a.s.l., on *Austrocedrus chilensis* (D. Don) Pic. Serm. & Bizzarri (Cupressaceae), 4 Mar 2011, leg. & det. S.P. Gorjón, coll. 3030 (CIEFAP); Neuquén, Nahuel Huapi National Park, 800 m a.s.l., on *Nothofagus dombeyi*, 26 May 2010, leg. & det. S.P. Gorjón, coll. 2856 (CIEFAP).

Basidiome resupinate, effuse, dirty white to pale beige, grandinoid due to projecting small tufts, margin diffuse. Hyphal system monomitic, hyphae clamped, with thickened walls in the subhymenium. Tufts formed by projecting thin-walled, encrusted hyphae, basidia and cystidiols. Cystidiols few, inconspicuous, with an acute but often collapsed apex, hyphae with a subcapitate apex not noticeable, only very few seen. Basidia cylindrical, constricted, 25–30 × 4–5 µm, with four sterigmata and a basal clamp. Basidiospores narrowly ellipsoid, often curved, 6–7 × 2.5–3.5 µm, smooth, thin-walled, inamyloid, indextrinoid, acyanophilous.

*Odontia stratosa* is similar to *Hyphodontia nespori* (Bres.) J. Erikss. & Hjortstam because of its encrusted projecting hyphae, although with smaller basidiospores and lacking subulate cystidia. It is also similar to *Hyphodontia nesporina* Hallenb. & Hjortstam, a species



**Figure 5** *Odontia stratos* ( $\equiv$  *Hyphodontia novozelandica*) PDD 18076, holotype. **A**, Part of the basidiome. **B**, Hymenophore with tufts. **C**, Tuft. **D**, Projecting thin-walled and encrusted hyphae in the apical part of the tuft. **E**, Basidia. **F**, Cystidiols with subulate apex. **G**, Basidiospores.

from Patagonia, which differs in having a chalky white hymenial surface with abrupt margins, longer and denser aggregation of aculei, thickened obtuse and subulate hyphae in the apex of the aculei and narrower basidiospores (Hallenberg & Hjortstam 1996). Contrary to Cunningham's description, we did not observe a stratose context. The geographical epithet *novozelandica* is proposed as the new name since Cunningham's epithet *stratosa* is preoccupied in *Hyphodontia* by *Hyphodontia stratosa* Hjortstam & Ryvarden.

*Odontia subscopinella* G. Cunn., Trans. Roy. Soc. New Zealand 86: 72, 1959.

≡ *Hyphodontia subscopinella* (G. Cunn.) Gresl. & Rajchenb., Mycologia 92: 1158, 2000.

≡ *Xylodon subscopinellus* (G. Cunn.) Hjortstam & Ryvarden, Syn. Fung. (Oslo) 226: 40, 2009.

TYPE SPECIMEN EXAMINED: *Odontia subscopinella*: NEW ZEALAND. Auckland, Hatepe, Lake Taupo, 1300 ft, Mar 1953, on *Leptospermum (Kunzea) ericoides* A. Rich. (Myrtaceae), leg. J.M. Dingley, PDD 17992.

The species was previously studied by Greslebin & Rajchenberg (2000) and transferred to *Hyphodontia*.

*Odontia tessellata* G. Cunn., Trans. Roy. Soc. New Zealand 86: 89, 1959.

= *Hydnum webbii* Berk., J. Bot., Lond. 3: 190, 1844.

≡ *Scopulodontia webbii* (Berk.) Nakasone, Sydowia 61: 277, 2009.

= *Odontia latemarginata* Pat., J. Bot., Paris 11: 342, 1897.

TYPE SPECIMEN EXAMINED: *Odontia tessellata*: NEW ZEALAND. Otago, Ulva Islet, Stewart Island, Feb 1954, on bark or decorticated wood

of dead stems of *Weinmannia racemosa* L.f. (Cunoniaceae), leg. J.M. Dingley, PDD 18041.

The species was studied by Nakasone (2003, 2009) and transferred to *Scopulodontia* Hjortstam. It is well characterized by a hymenophore with rounded tubercles, encrusted cystidia and small ellipsoid basidiospores. For complete descriptions and illustrations see Cunningham (1959) and Nakasone (2003, 2009).

*Odontia verruculosa* G. Cunn., Trans. Roy. Soc. New Zealand 86: 80, 1959.

≡ *Trechispora verruculosa* (G. Cunn.) K.H. Larss., Nordic J. Bot. 16: 98, 1996.

*Odontia verruculosa* belongs in *Trechispora* P. Karst. It is characterized by subglobose to broadly ellipsoid, densely aculeate basidiospores and characteristic hyphal encrustations of flat rhomboidal crystals or lancet-like rodlets. For a complete description and illustration see Larsson (1996).

*Odontia vesiculosa* G. Cunn., Trans. Roy. Soc. New Zealand 86: 75, 1959.

= *Hyphodontia lanata* Burds. & Nakasone, Mycologia 73: 461, 1981.

≡ *Grandinia lanata* (Burds. & Nakasone) Nakasone, Mycol. Mem. 15: 135, 1990.

≡ *Xylodon lanatus* (Burds. & Nakasone) Hjortstam & Ryvarden, Syn. Fung. (Oslo) 23: 99, 2007.

*Odontia vesiculosa* is conspecific with *Hyphodontia lanata*. For descriptions and illustrations see Burdsall & Nakasone (1981) and Langer (1994).

## Discussion

Nine species of *Odontia* described as new by Cunningham were previously reclassified by various authors in five diverse genera: *Amylocorticiellum*, *Phlebia*, *Scopulodontia*,

*Trechispora* and *Xylodon*. We studied Cunningham's remaining five species of *Odontia*. We determined that *O. oleifera* is a synonym of *Dentipellis leptodon*, and the remaining species were transferred to *Hyphodontia*, *Hypochnicium* or *Phlebia*.

*Odontia fragilis* is clearly a member of *Phlebia* and is morphologically closely related to *Phlebia uda*. Its phylogenetic relationship with other members of the hydroid, acystidiate species of *Phlebia* is unresolved.

*Odontia novae-zealandiae* and *O. flexibilis* belong in *Hypochnicium s.l.* because of their thick-walled, cyanophilous basidiospores. The inclusion of the species in *Nodotia* Hjortstam was considered. *Nodotia* is separated from *Hypochnicium* by the presence of skeletoid encrusted hyphae and a distinctly odontoid to hydroid hymenophore (Hjortstam 1987). Molecular studies by Paulus et al. (2007) and Tellería et al. (2010) indicated that *Hypochnicium* (including *Gyrophanopsis* Jülich and *Nodotia*) is monophyletic. These results suggest that spore ornamentation and presence or absence of cystidial elements are infrageneric variations useful only at the species level. Molecular analyses of the internal transcribed spacer (ITS) region inferred that *Hypochnicium lyndoniae*, the generic type of *Nodotia*, is closely related to *Hypochnicium bombycinum*, the generic type of *Hypochnicium* (Tellería et al. 2010). Therefore, we transferred *O. novae-zealandiae* and *O. flexibilis* to *Hypochnicium*, even though we recognize that *Nodotia* is a useful morphological genus. *Gyrophanopsis*, with *Pellicularia zealandica* G. Cunn. as the type species, differs in having a smooth hymenophore, appearing velutinate due to protruding, encrusted, septate cystidia.

*Odontia stratosa* belongs in *Hyphodontia s.l.*, but because of the lack of cystidia, it could also be included in *Xylodon* (Pers.) Fr. *Xylodon* is a useful genus for practically all *Hyphodontia s.l.* species lacking distinct cystidia. *Odontia quercina* Pers., the generic type of *Xylodon*, is morphologically distinct from *Gonatobotrys pallidula* Bres. (= *Hyphodontia pallidula* (Bres.)

J. Erikss.), the generic type of *Hyphodontia* J. Erikss. Similarly, *Hydnum barba-jovis* Bull. (= *Kneiffiella barba-jovis* (Bull.) P. Karst.), the generic type of *Kneiffiella* P. Karst., is morphologically and phylogenetically distinct from *Hyphodontia s.str.* and *Xylodon*. Because the *Hyphodontia s.l.* group is not fully resolved by molecular methods (Larsson et al. 2006), we choose to place *Odontia stratosa* in *Hyphodontia s.l.*

### Acknowledgements

Drs Karen K Nakasone, Genevieve Gates and two anonymous reviewers suggested comments to the manuscript. Drs Shaun Pennycook and Eric McKenzie recommended some corrections on nomenclature. This study could not have been done without the cooperation of curators of the following herbaria: PDD, SALA, HUBO. Special thanks to Peter K Buchanan for his assistance in obtaining specimens used in this study. Julian M Baltazar loaned a specimen of *H. gomezii*. The Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET, Argentina) supported this research through PIP 80101000. Sergio Pérez Gorjón is a postdoctoral research fellow at Agencia Española de Cooperación Internacional (MAEC-AECID).

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