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ARTICLE

Accepted *Trichoderma* names in the year 2015

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Abstract: A list of 254 names of species and two names of varieties in *Trichoderma* with name or names against which they are to be protected, following the ICN (Melbourne Code, Art. 14.13), is presented for consideration by the General Committee established by the Congress, which then will refer them to the Nomenclature Committee for Fungi (NCF). This list includes 252 species, one variety and one form. Two new names are proposed: *T. neocrassum* Samuel (syn. *Hypocrea crassa* P. Chaverri & Samuels), *T. patellotropicum* Samuels (syn. *Hypocrea patella* f. *tropica* Yoshim. Doi). The following new combinations in *Trichoderma* are proposed: *T. brevipes* (Mont.) Samuels, *T. cerebriforme* (Berk.) Samuels, *T. latizonatum* (Peck) Samuels, and *T. poronioideum* (A. Möller) Samuels.

The following species are lectotypified: *T. americanum* (Canham) Jaklitsch & Voglmayr, *Gliocladium flavofuscum* J.H. Miller, Giddens & A.A. Foster, *T. inhamatum* Veerkamp & W. Gams, *T. konilangbra* Samuels, O. Petrini & C.P. Kubicek, *T. koningii* Oudem., *T. pezizoides* (Berk. & Broome) Jaklitsch & Voglmayr, *T. sulphureum* (Schwein.) Jaklitsch & Voglmayr and *T. virens* (J.H. Miller, Giddens & A.A. Foster) Arx. Epitypes are proposed for the following species: *T. albocorneum* (Yoshim. Doi) Jaklitsch & Voglmayr, *T. albofulvum* (Berk. & Broome) Jaklitsch & Voglmayr, *T. atrogelatinosum* (Dingley) Jaklitsch & Voglmayr, *T. corneum* (Pat.) Jaklitsch & Voglmayr, *T. cornu-damae* (Pat.) Z.X. Zhu & W.Y. Zhuang, *T. flaviconidium* (P. Chaverri, Druzhinina & Samuels) Jaklitsch & Voglmayr, *T. hamatum* (Bonord.) Bain., *T. hunua* (Dingley) Jaklitsch & Voglmayr, *T. patella* (Cooke & Peck) Jaklitsch & Voglmayr, *Hypocrea patella* f. *tropica* Yoshim. Doi, *T. polysporum* (Link) Rifai, *T. poronioideum* (A. Möller) Samuels *T. semiorbis* (Berk.) Jaklitsch & Voglmayr, *T. sulphureum* (Schwein.) Jaklitsch & Voglmayr, and *T. tropicosinense* (P.G. Liu) P.G. Liu, Z.X. Zhu & W.Y. Zhuang.

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INTRODUCTION

On 30 July 2011, the provision to permit different morphs of the same fungal species to bear separate names was ended at *the* XX International Botanical Congress (IBC) in Melbourne. This decision was retroactive, but names published before 1 January 2013, which would otherwise have been illegitimate, were ruled to nevertheless be legitimate, as detailed in the *International Code of Nomenclature for algae, fungi, and plants* (ICN; McNeill *et al.* 2012). The nearly 150 year-old practice of independently naming the asexual and sexual morphs of non-lichenized pleomorphic ascomycetes and basidiomycetes came to an end. Various procedures were put in place by the ICN to minimize the disruption of names in moving to the one name = one fungus nomenclature.

As regards whether *Trichoderma* or *Hypocrea* should be adopted for the genus, the ICN concluded that the choice between two names should be determined not only by priority of publication, but also by consensus among users. In this case *Trichoderma* Pers. 1794 was published earlier than *Hypocrea* Fr. 1825 and, pursuant to Art 14.13, a poll taken by the ICTF (International Commission on the Taxonomy of Fungi) International Subcommission on the Taxonomy of *Trichoderma* and *Hypocrea* (www.isth.info) indicated a strong preference to maintain *Trichoderma* over *Hypocrea* (Rossman *et al.* 2013). Having decided to give priority to *Trichoderma* (with an asexually typified type species) over *Hypocrea* (with a sexually typified type species), Art. 14.13 further allows for the presentation of a list of names in *Trichoderma* with name or names against which they are to be protected. Further, Art. 56.3 allows for the preparation of a list of names to be suppressed. The lists are to be presented

to the General Committee established by the Congress, which then will refer them to the Nomenclature Committee for Fungi (NCF). Following approval by the appropriate committees, rejected names are to be treated as rejected under Art. 56.1 and may become available for use only by conservation under Art. 14. We have not presented a list of names to be suppressed (Art. 56.3) because any names of *Trichoderma* or *Hypocrea* that are not in current use (i.e. have not been cultured and/or their DNA sequenced) can be epitypified and added to the list of names in use.

Subsequent to the Melbourne Congress, it emerged that in order to promote stability of names it was essential that listed names should be protected against unlisted names and not just listed names against which they were protected (Hawksworth 2014). This view was overwhelmingly supported by the 10th International Mycological Congress (IMC10) in Bangkok in 2014, which agreed that the lists be referred to as "Lists of Protected Names" (Redhead *et al.* 2014). There was little support at the Congress for having any lists of names not to be used, but if lists were prepared the Congress concluded they should be referred to as "Lists of Suppressed Names" to differentiate them from the existing lists of rejected names. Following discussions by the International Commission on the Taxonomy of Fungi (ICTF), formal proposals to modify the ICN to allow these strongly supported changes have now been made (Hawksworth 2015).

We have included in the present list of accepted names all those names in *Trichoderma* that are 'in use' as of the middle of 2015; thus the list includes those names that were 'in use' as of 1 January 2013, the date on which the revision to Art. 59 came into effect. With only a few exceptions noted in the current list, a name is considered to be 'in use' if it is represented by a culture and/or diagnostic DNA sequences that are deposited in GenBank (http: //www.ncbi.nlm.nih.gov) in the belief that reliable identification of a species of *Trichoderma* can, with rare exceptions, only be achieved through comparison of a diagnostic sequence such as *tef*1. Jaklitsch & Voglmayr (2015) have published the most complete phylogeny of the genus *Trichoderma*, based on *rbp*2.

A list of species of *Trichoderma* that are not currently in use as defined by our criteria is appended at the end. The identity of most of these species is unknown; many are illegitimate later homonyms, synonyms of other *Trichoderma* species, or are not species of *Trichoderma*. Many of the names found in this list can be placed in use by epitypification.

In the following, the nomenclature of the *Trichoderma*/*Hypocrea* pairs is examined and the correct or preferential name for each species is presented. At least 400 species have been described as *Hypocrea* and only a small number of them have been accounted for in modern terms. Many are not actually species of *Trichoderma.* A number of *Hypocrea* names that did not have named *Trichoderma* asexual morphs were transferred into *Trichoderma* recently (Jaklisch & Voglmayr 2014) and a few more names are added here because of their usage in recent literature.

Recent research has shown that a few reported links between a *Trichoderma* and a *Hypocrea* are incorrect. Most notable is the link between *T. harzianum* and *H. lixii* (Chaverri & Samuels 2002). Revision of the *T. harzianum* species complex has revealed that *T. harzianum* and *H. lixii* are distinct species and the new combination *T. lixii* was proposed (Chaverri *et al.* 2015).

In most cases the asexual and sexual morph names of *Trichoderma* species with named teleomorphs are based on different type specimens. Consequently, from a nomenclatural point of view they represent distinct and priorable species names. In a nomenclatural sense, the species having named teleomorphs fall into four groups which can be defined as follows:

(I) The *Trichoderma* name is older than the *Hypocrea* name and thus automatically has priority.

(II) Asexual and sexual morph names were proposed simultaneously and using the same epithet. In this case the *Trichoderma* name has priority in the genus *Trichoderma*.

(III) Asexual and sexual morphs share the same epithet but the *Hypocrea* name is older than the *Trichoderma* name. In these cases the older epithet cannot be adopted because it is already occupied in *Trichoderma*. Under Art. 11.4 of the ICN the next available name is to be adopted (Art. 11.4), and in these cases the next available name is always the *Trichoderma* name, which is adopted here.

(IV) The asexual and sexual morphs have different epithets and the sexual name is the older and should be adopted, but because of common usage it is preferable to maintain the younger *Trichoderma* name. Accordingly, several names have been proposed for conservation (Samuels 2014) but additional names remain to be conserved as proposed herein.

PROPOSAL FOR A PROTECTED GENERIC NAME IN *HYPOCREALES*

Rossman *et al.* (2013) proposed the protection or suppression of several generic names in *Hypocreales*. Since then, it has been found necessary to suppress two additional sexually-typified names against *Trichoderma*.

Trichoderma Pers. 1794 vs. *Sarawakus* Lloyd 1924 and *Aphysiostroma* A.T. Martinez & G. Moreno 1986

Trichoderma Pers. 1794, typified by *T. viride* Pers. 1794, is an asexual morph-typified name and has priority over *Sarawakus* Lloyd 1924, typified by *S. lycogaloides* (Berk. & Broome) Lloyd 1924, and *Aphysiostroma* A.T. Martinez & G. Moreno 1986, typified by *A. stercorarium* A.T. Martinez & G. Moreno 1986. Since 2008 (Jaklitsch *et al.* 2008, Jaklitsch 2011) it has been known that the type species of *Aphysiostroma* clusters within *Trichoderma* and thus *Aphysiostroma* should be considered a synonym of *Trichoderma*. Similarly, Jaklitsch & Voglmayr (2014b) have shown that the type species of *Sarawakus* clusters in *Trichoderma* and it too should be considered as a synonym of *Trichoderma*. Jaklitsch & Voglmayr (2014b) transferred *S. lycogaloides* and several additional species (see below) into *Trichoderma* and Jaklitsch & Voglmayr (2015) recombined *A. stercorarium in Trichoderma.* However, Art 57.2 of ICN stipulates that "an asexual morph-typified name that has priority is not to displace the teleomorph name(s) unless and until a proposal to reject the former under Art. 56.1 or 56.3 or to deal with the latter under Art. 14.1 or

14.13 has been submitted and rejected." Until now, no such proposal has been made for the protection of *Trichoderma* over *Aphysiostroma* or *Sarawakus,* but as that provision in the ICN is proposed for deletion (Hawksworth 2015) this may not become necessary.

ACCEPTED *TRICHODERMA* NAMES IN 2015

Current ICN only permits names to be protected against listed names which otherwise would take precedence. While it is anticipated that the provisions will be changed to permit listed names to be protected against unlisted names (see above), the current mandate of the General Committee and the Nomenclature Committee for Fungi is consider for protection only names where there are competing names. In order to facilitate the work of the Committees, the few names which require protection against competing names are pre-fixed by an asterisk (*), although most are aready proposed fro conservation. However, we wish all names published prior to 1 January 2013 and accepted here to be included in the eventual list of protected names as soon as that is permitted by the ICN.

The entries are presented here largely in the form that is likely to be adopted for publication in the eventual list of protected names, though for completeness we have not abbreviated the authors of names where there are more than two to "& al.", omitted "in" before journal titles, and retained the names of authors of papers in which they were published ("in" citations).

Trichoderma aeroaquaticum K. Yamaguchi, Tsurumi, Chuaseeharonnachi & Nakagiri, *in* Yamaguchi & al., Mycologia 104: 1113. 2012.
Typus: [specimen] (BBH 27841).
Ex-type culture: BCC 36135 = NBRC 108034.
Representative *sequences: tef*1*:* AB646530*, rpb*2: AB646526.

Trichoderma aerugineum Jaklitsch, Stud. Mycol. 63: 24. 2009.
Typus: [dry culture] (WU 29031a).
(=) *Hypocrea aeruginea* Jaklitsch, Stud. Mycol. 63: 24. 2009.
Typus: [specimen] (WU 29301).
Ex-type culture: CBS 120541.
Representative sequences: *tef*1: FJ860608, *rpb*2: 860516.

Trichoderma aethiopicum Mullaw, C.P. Kubicek & Samuels, *in* Samuels & al., Fungal Divers. 55: 81. 2012.
Typus: [dry culture] (BPI 882291).
Ex-type culture: CBS 130628
Representative sequences: *tef*1: EU401616. *rpb*2: HM182986.

Trichoderma afarasin P. Chaverri & Branco-Rocha, *in* Chaverri & al., Mycologia 107: 567. 2015.
Typus: [dry culture] (BPI 88109).
Ex-type culture: G.J.S. 99-227 = CBS 130755 = = IMI 393967.
Representative sequences: *tef*1: AF348093, FJ463327; *rpb*2: FJ442778, FJ442799.

Trichoderma afroharzianum P. Chaverri, F.B. Rocha, Degenkolb & I. Druzhinina, *in* Chaverri & al., Mycologia 107: 568. 2015.
Typus: [dry culture] (BPI 881096).
Ex-type culture: G.J.S. 04-186 = CBS 124620.
Representative sequences: *tef*1: FJ463301, FJ463401, AF469194; *rpb*2: FJ442691, FJ442726.

Trichoderma aggressivum Samuels & W. Gams, *in* Samuels & al., Mycologia 94: 167. 2002.
Typus: [dry culture] (BPI 748201).
Ex-type culture: DAOM 222156 = IMI 393971.
Representative sequences: *tef*1: AF348098, AY605809; *rpb*2: AF348098.

Trichoderma aggressivum f. **europaeum** Samuels & W. Gams, *in* Samuels & al., Mycologia 94: 167. 2002.
Typus: [dry culture] (BPI 748204).
Ex-type culture: CBS 100526.
Representative sequences: *tef*1: FJ467645, AF348089, KP008993; *rpb*2: AF545541, FJ442706.

Trichoderma albocorneum (Yoshim. Doi) Jaklitsch & Voglmayr, Mycotaxon 126: 145. 2013.
(≡) *Hypocreae albocornea* Yoshim. Doi, Bull. Natl. Sci. Mus. 15: 712. 1972.
Typus: [specimen] (TNS.D-759 = TNS-F-190171. Isotypus NY 01293242).
Epitypus (***hic designatus***, MBT 201068): [specimen] JAPAN (TNS-F-193172 Y. Doi D.4431).
Ex-epitype culture: IFO 30608 = G.J.S. 97-28.
Representative sequences: *tef*1: AY937440.
Note: The culture derived from the original collection of this species has been lost. Another Japanese (Kagoshima) collection, not a paratype, was cultured by Doi and deposited as IFO 30608.

Trichoderma albofulvum (Berk. & Broome) Jaklitsch & Voglmayr, Mycotaxon 126: 145. 2013.
(≡) *Hypocrea albofulva* Berk. & Broome, J. Linn. Soc. Bot. 14: 113. 9 Oct 1873.
Typus: [specimen] (CEYLON, Nuwara Eliya], No. 5 (K, ex herb. Berkeley).
Epitypus (***hic designatus***, MBT 201069): [specimen] THAILAND (BPI 841392).
Ex-epitype culture: G.J.S. 01-265 = CBS 114787.
Representative sequences: *tef*1 = DQ835494, *rpb*2: KR094870.
Note: The specimen we have selected as epitype is a recent collection from Thailand that agrees with the type collection, from Sri Lanka in its morphology and geography. Its culture was derived from ascospores germinating in asci. Additional sequences deposited in GenBank for culture G.J.S. 01-234 (= CBS 114788; *tef*1: DQ846668, ITS: DQ84666) are divergent, representing a species in the Viride clade but distinct from *T. albofulvum* as accepted here. The spores isolated from this collection were not germinating in asci.

Trichoderma albolutescens Jaklitsch, Fungal Divers. 48: 202. 2011.

Typus: [dry culture] (WU 29173a)
(=) *Hypocrea albolutescens* Jaklitsch, Fungal Divers. 48: 202. 2011.
Typus: [specimen] (WU 29173).
Ex-type culture: CBS 119286.
Representative sequences: *tef*1: FJ860609, *rpb*2: FJ860517.

Trichoderma alcalifuscescens (Overton) Jaklitsch & Voglmayr, Mycotaxon 126: 145. 2013.
(≡) *Hypocrea alcalifuscescens* Overton, in Overton & al., Stud. Mycol. 56: 62. 2006.
Typus: [specimen] (BPI 843638). Isotypus (TAA-M 181548).
Ex-type culture: CBS 122303 = TFC 2000-36.
Representative sequences: *tef*1: FJ860610; *rpb*2: DQ834462.

Trichoderma alni Jaklitsch, *in* Jaklitsch & al., Mycologia 100: 799. 2008.
Typus: [dry culture] (WU 28224a).
Ex-type culture: CBS 120623.
(=) *Hypocrea alni* Jaklitsch, in Jaklitsch & al., Mycologia 100: 799. 2008.
Typus: [specimen] (WU 28224).
Representative sequences: *tef*1: EU498312, *rpb*2: EU398349.

Trichoderma alutaceum Jaklitsch, Fungal Divers. 48: 69. 2011.
Typus: [dry culture] (WU 29177a).
Ex-type culture: CBS 120535.
(≡) *Sphaeria alutacea* Pers., Comm. fung. clav.: 12. 1797 : Fr., Syst. Mycol. 2: 325. 1823.
(≡) *Podostroma alutaceum* (Pers.) G.F. Atk., *Bot. Gaz.* 40: 416. 1905.
Neoypus (*vide* Chamberlain & al., Karstenia 44: 12. 2004): [icon in] Persoon, Obs. Mycol. 2: 66, tab. I, fig. 2 a–c. 1800.
Representative sequences: *tef*1: FJ179567, *rpb*2: FJ179600.
Note: *Sphaeria clavata* Sowerby (Col. Fig. Engl. Mushr. 2: pl 189. 1799) is sometimes given as a synonym of *S. alutacea* (e.g. Jaklitsch, 2011), but *S. clavata* is an illegitimate later homonym of *S. clavata* (Scop.) Weber (Spicil. Fl. Goett. 287. 1778; *Xylariaceae*). The holotype of *T. alutaceum* was derived from ascospores of a collection made in the United Kingdom (WU 29177). This culture was deposited as CBS 120535 and sequences were deposited.

Trichoderma amazonicum P. Chaverri & Gazis, *in* Chaverri & al., Mycologia 103: 146. 2010 [“2011”].
Typus: [dry culture] (BPI 880413).
Ex-type culture: CBS 126898.
Representative sequences: *tef*1: HM123476, *rpb*2: HM142367.

Trichoderma americanum (Canham) Jaklitsch & Voglmayr, Mycotaxon 126: 145. 2013.
(≡) *Hypocrea citrina* (Fr.) Fr. var. *americana* Canham, Mycologia 61: 320. 1969.
Lectotypus (***hic designatus***, MBT 201070)*:* [specimen] USA, New York, Madison Co., Nelson Swamp, on *Fomes pinicola*, 9 Oct 1949, D.G. Huttleston [C.T. Rogerson 3284] (NY 0965597; isolectotypus presumed CUP 38045).
Ex-type culture: ATCC 18574. Other representative cultures CBS 123072
Representative sequences: *tef*1: DQ835435, DQ0005523, DQ835489; *rpb*2: DQ835455.
Note: In the protologue for *H. citrina* var. *americana* the holotype is given as deposited in CUP and NY, and the specimen indicated as type of *H. citrina* var. *americana* in the hand of S. C. Canham is marked ‘EX CUP 38045.’ Because Susan Canham worked at NY, we presume that the NY portion is the portion she worked with and, accordingly, designate it here as lectotype.

Trichoderma andinense (Samuels & O. Petrini) Samuels, Jaklitsch & Voglmayr, *in* Jaklitsch & Voglmayr, Mycotaxon 126: 146. 2013.
(≡) *Hypocrea andinensis* Samuels & O. Petrini, in Samuels & al., Stud. Mycol. 41: 13. 1998.
Typus: [specimen] VENEZUELA: Edo. Miranda, Parque Nacional Sierra Nevada, above Tabay, Qda. La Mucuy, Nov 1990, *G.J. Samuels 6753* (BPI 1109854).
Ex-type culture: CBS345.97 = ATCC 208857.
Representative sequences: *tef*1: AY956321, *rpb*2: JN175531.

Trichoderma appalachiense Samuels & Jaklitch, *in* Jaklitsch & al., Persoonia 33: 135. 2013.
Typus: [specimen] (BPI 746727).
Ex-type culture: G.J.S. 97-243 = CBS 133558.
Represenstative sequences: *tef*1: DQ 307502, DQ307503; *rpb*2: DQ307503.

Trichoderma applanatum Z.X. Zhu & W.Y. Zhuang, Mycologia 107: 332. 2015.
Typus: CHINA. Anhui, Jinzhai, Tiantangzhai, 900–1100 m, on small twig, 23 Aug 2011, *S.L. Chen*, *W.Y. Zhuang*, *H.D. Zheng* & *Z.Q. Zeng* 7792 (HMAS 266666).
Ex-type culture HMAS 245081 = CGMCC 3.17526.
Representative sequences: *tef*1 KJ634759, *rpb*2 KJ634726.

Trichoderma arundinaceum Zafari, Gräfenhan & Samuels, *in* Degenkolb & al., Mycol. Prog. 7: 208. 2008.
Typus: [dry culture] (BPI 878405).
Ex-type culture: CBS 119575 = ATCC 90237.
Representative sequences: *tef*1: EU338921, *rpb*2: EU338326.

Trichoderma asperelloides Samuels, *in* Samuels & al., Mycologia 102: 961. 2010.
Typus: [dry culture] (BPI 879770).
Ex-type culture: CBS 125938.
Representative sequences: *tef*1: GU248412, *rpb*2: GU248411.

Trichoderma asperellum Samuels, Lieckfeldt & Nirenberg, Sydowia 51: 81. 1999.
*Typus: [*dry culture] (BPI 746504).
Ex-type culture: CBS 433.97.
Representative sequences: *tef*1: AF456907, AY376058; *rpb*2: EU248617.

Trichoderma atlanticum Jaklitsch, Fungal Divers. 48: 83. 2011.
Typus: [dry culture] (WU 29208a).
Ex-type culture: CBS 120632.
(=) *Hypocrea atlantica* Jaklitsch, Fungal Divers. 48: 83. 2011.
Typus: [specimen] (WU 29280).
Representative sequences: *tef*1: FJ860649, *rpb*2: FJ860546.

Trichoderma atrobrunneum F.B. Rocha, P. Chaverri & W. Jaklitsch, *in* Chaverri & al., Mycologia 107: 571. 2015.
Typus: [specimen] (BPI 802854).
Ex-type culture: G.J.S. 92-110 = CBS 548.92.
Representative sequences: *tef*1: AF443942, AF443943, FJ463297; *rpb*2: FJ442745, FJ442735, FJ442777.

Trichoderma atrogelatinosum (Dingley) Jaklitsch & Voglmayr, Mycotaxon 126: 146. 2013.
(≡) *Hypocrea atrogelatinosa* Dingley, Trans. Roy. Soc. New Zealand 83: 645. 1956.
Typus: [specimen] (PDD 10471).
Epitypus (***hic designatus***, MBT 202235): [metabolically inactive culture] NEW ZEALAND (CBS 237.63).
Ex-epitype culture: CBS 237.63
Representative sequences: *tef*1: KJ871083, *rpb*2: KJ842201.
Note: *Hypocrea atrogelatinosa* had no ex-type culture but Joan Dingley sent either a culture or a specimen identified as *H. atrogelatinosa* to John Webster, who deposited a culture in CBS as CBS 237.63. The specimen from which this culture was isolated cannot be located. It was isolated from basidiomata of a species of *Bondarzewia* (*Russulales*, *Bondarzewiaceae*). No specific substrate is indicated for the type collection of *H. atrogelatinosa,* but a paratype was collected on a species of *Fuscoporia* (*Hymenochaetales*, *Hymenochaetaceae*). Thus it is reasonable to interpret the species *H. atrogelatinosa* as growing on basidiomata of *Hymenochaetaceae*. We interpret the culture derived from the *Fuscoporia* (CBS 237.63) as being representative of the species and we designate this metabolically inactive culture as epitype of *H. atrogelatinosa.* Additional soil isolations made in New Zealand (LU498, LU501, LU502, LU503, LU504, LU505) can be identified as this species.

Trichoderma atroviride P. Karsten, Finl. Mögelsvamp.: 21. 1892.
Typus: [specimen] **"**På torra stjelkar af *Angelica* (Kildin I Ishafvet). 7" (H *fide* Bissett, Can. J. Bot. 70: 641. 1992)
Epitypus (*vide* Gams & Myer in Mycologia 90: 908. 1998): [dry culture] SLOVENIA (CBS 142.95).
Ex-epitype culture: CBS 142.95.
(=) *Hypocrea atroviridis* Dodd, Lieckfeldt & Samuels, Mycologia 95: 36. 2003.
Typus: [specimen] (BPI 748312).
Ex-type culture: CBS 110086 = NBRC 10177 = ATCC MYA-2687.
Representative sequences: *tef*1: AF456887, AF456891, AY376051, FJ80611; *rpb*2: EU341801, FJ806518.

Trichoderma auranteffusum Jaklitsch, Fungal Divers. 48: 162. 2011.
Typus: [dry culture] (WU 29183a).
Ex-type culture: CBS 119284.
(=) *Hypocrea auranteffusa* Jaklitsch, Fungal Divers. 48: 162. 2011.
Typus: [specimen] (WU 29183).
Representative sequences: *tef*1: FJ860613, *rpb*2: FJ860520.

Trichoderma aureoviride Rifai, Mycol. Pap. 116: 34. 1969.
Typus: [dry culture] (SHD-M 2663).
Lectotypus (*vide* Rifai & Webster, Trans. Br. Mycol. Soc. 49: 289. 1966) [specimen] ENGLAND: North Wooton. On *Quercus* wood, Aug. 1875 (K(M) 161792).
Epitypus (*vide* Jaklitsch, Stud. Mycol. 63: 34. 2009) (K(M) 162235).
(=) *Hypocrea aureoviridis* Plowr. & Cooke, Grevillea 8: 104. 1880.
Lectotypus (vide Jaklitsch in Stud. Mycol. 63: 34. 2009): ENGLAND, Norfolk, North Wootton, on wood, Aug. 1875, *C.B. Plowright* (ex herb. M.C. Cooke) (K(M) 161972).
Epitypus (*vide* Jaklitsch, ibid.): ENGLAND, Norfolk, Thetford, Thetford National Forest Park, close to Lynford, MTB 3530/1, 52°28'54" N, 00°41'01" E, elev. 30 m, on decorticated, well-rotted hardwood, 3–4 cm thick, soc. *Eutypa* sp., 13 Sep. 2004, *W. Jaklitsch & H. Voglmayr* (W.J. 2708) (K(M) 162235).
Ex-epitype culture: CBS 120536.
Representative sequences: *tef*1: FJ665431, FJ665432, FJ860615; *rpb*2: FJ179602, JQ 685882.

Trichoderma austriacum Jaklitsch, Fungal Divers. 48: 125. 2011.
Typus: [dry culture] (WU 29193a).
(=) *Hypocrea austriaca* Jaklitsch & Voglmayr in Jaklitsch, Fungal Divers. 48: 125. 2011.
Typus: [specimen] (WU 29193).
Ex-type culture: CBS 122494.
Representative sequences: *tef*1: FJ860619, *rpb*2: FJ860525.

Trichoderma austrokoningii Samuels & Druzhinina, *in* Samuels & al., Stud. Mycol. 56: 92. 2006.
Typus: [dry culture] (BPI 870962B).
Ex-type culture: CBS 119092.
(=) *Hypocrea austrokoningii* Samuels & Druzhinina in Samuels & al., Stud. Mycol. 56: 92. 2006.
Typus: [specimen] (BPI 870962A).
Representative sequences: *tef*1: DQ307561, *rpb*2: FJ442772.

Trichoderma avellaneum (Rogerson & S.T. Carey) Jaklitsch & Voglmayr, Mycotaxon 126: 146. 2013.
(≡) *Hypocrea avellanea* Rogerson & S.T. Carey in Carey & Rogerson, Brittonia 28: 381. 1976.
Typus: [specimen] USA: *Massachusetts*: Franklin County, Leverett, Mt. Toby State Forest, on *Marasmius subnudus*, 27 Aug 1958, H.E. & M.E. Bigelow (M.E.B. 2471) (NY, 00965531).
Ex-type culture: CBS 121667.
Representative sequences: *tef*1: AY225857, *rpb*2: AF545562.

Trichoderma balearicum Jaklitsch & Voglmayr, Stud. Mycol. 80: 42. 2015.

Typus: [specimen] (WU 33371).
Ex-type culture: CBS 133222.
Representative sequences: *tef*1: KJ665434, *rpb*2: KJ665242.

Trichoderma barbatum Samuels, *in* Samuels & Ismaiel, Mycol. Prog. 11: 233. 2011.
Typus: [dry culture] (BPI 881029).
Ex-type culture: CBS 125733.
Representative sequences: *tef*1: HQ342223, *rpb*2: HQ342286.

Trichoderma bavaricum Jaklitsch, Fungal Divers. 48: 125. 2011.
Typus: [dry culture] (WU 29196a).
(=) *Hypocrea bavarica* Jaklitsch, Fungal Divers. 48: 125. 2011.
Typus: [specimen] (WU 29196).
Ex-type culture: CBS 120538.
Representative sequences: *tef*1: FJ860620, *rpb*2: FJ860526.

Trichoderma bissettii Sandoval-Denis & Guarro, *in* Sandoval-Denis & al., J. Clin. Microbiol. 52: 2117. 2014.
Typus: [dried culture] (CBS H21626).
Ex-type culture: CBS 137447 = UTHSC 08-2443 = FMR 12635.
Representative sequences: *tef*1: HG931266, KJ665437; *rpb*2: KJ665244, KJ665245.

Trichoderma brevicompactum G.F. Kraus, C.P. Kubicek & W. Gams, *in* Kraus & al., Mycologia 95: 1063. 2004.
Typus: [dry culture] UNITED STATES: *New York*: Geneva, New York State Agricultural Experiment Station, isolated from soil in a sunflower field, 20 Jun 2000, S. Petzolt & G.E. Harman (DAOM).
Ex-type culture: CBS 109720.
Representative sequences: *tef*1: EU338299, *rpb*2: EU338317.

Trichoderma brevipes (Mont.) Samuels, **comb. nov.** MycoBank MB812025
(≡ *Cordyceps brevipes* Mont., Syll. Gen. crypt. 201. 1856.
(≡) *Podostroma brevipes* (Mont.) Seaver, Mycologia 2: 61. 1910.
Typus: FRENCH GUIANA: [on decorticated wood], *Leprieur 1073* (PC; isotypus BPI-Lloyd 715550).
Representative culture: G.J.S. 92-76 = NBRC 101780 = CBS 139044.
Note: Samuels & Lodge (1996) described the sexual and unnamed asexual morph of this species. The culture cited here is from a New Guinean collection (BPI 737810). This culture has not been sequenced. Because this species was originally described from tropical America and the only culture for which we have a culture was collected in New Guinea, we do not epitypify the species.

Trichoderma britannicum (Rifai & J. Webster) Jaklitsch & Voglmayr, *in* Jaklitsch & al., Mycologia 106: 141. 2014.
(≡) *Thuemenella britannica* Rifai & J. Webster, Trans. Brit. Mycol. Soc. 48: 409. 1965.
(≡) *Sarawakus britannicus* (Rifai & J. Webster) Samuels & Rossman, Mycologia 84: 34. 1992.
Typus: [specimen] (K 177252; ex herb. Sheffield 2543, ex IMI 90311).
Ex-type culture: CBS 253.62.
Representative sequences: *tef*1: KF134796, *rpb*2: KF134787.

Trichoderma britdaniae (Jaklitsch & Voglmayr) Jaklitsch & Voglmayr, Mycotaxon 126: 146. 2014 ["2013"].
(≡) *Hypocrea britdaniae* Jaklitsch & Voglmayr, Mycologia 104: 1216. 2012.
Typus: [specimen] (K(M) 89878).
Ex-type culture: None known.
Representative sequences: *tef*1: JQ685865, *rpb*2: JQ685881.
Note: Ascospores did not germinate; DNA for sequencing was isolated from a stroma.

Trichoderma brunneoviride Jaklitsch, *in* Jaklitsch & al., Mycologia 100: 805. 2008.
Typus: [dry culture] (WU 28233a).
Ex-type culture: CBS 121130.
(=) *Hypocrea brunneoviridis* Jaklitsch, *in* Jaklitsch & al., Mycologia 100: 805. 2008.
Typus: [specimen) (WU 28233).
Representative sequences: *tef*1: EU498316, *rpb*2: EU498358.

Trichoderma caerulescens (Jaklitsch & Voglmayr) Jaklitsch & Voglmayr, Mycotaxon 126: 146. 2013 [2014].
(≡) *Hypocrea caerulescens* Jaklitsch & Voglmayr, *in* Jaklitsch, Stadler & Voglmayr, Mycologia 104: 928. 2012.
Typus [dried culture] (WU 31600) (ex-type culture CBS 130011 = S195).
Ex-type culture: CBS 130011
Representative sequences: *tef*1: JN715621, *rpb*2: JN715604.

Trichoderma caesareum Samuels, *in* Samuels & Ismaiel, Mycol. Prog. 11: 234. 2011.
Typus: [dry culture] (BPI 863896).
Ex-type culture: CBS 124369.
Representative sequences: *tef*1: HQ342216, *rpb*2: HQ342279.

Trichoderma calamagrostidis Jaklitsch, Fungal Divers. 48: 186. 2011.
Typus: [dry culture] (WU 29198a).
(=) *Hypocrea calamagrostidis* Jaklitsch, Fungal Divers. 48: 186. 2011.
Typus: [specimen] (WU 29198).
Ex-type culture: CBS 121133.
Representative sequences: *tef*1: FJ860622, *rpb*2: FJ860528.

Trichoderma camerunense P. Chaverri & Samuels, *in* Chaverri & al., Mycologia 107: 571. 2015.
Typus: [metabolically inactive culture] (CBS 137272).
Ex-type culture: G.J.S. 99-230 = CBS 137272.
Representative sequences: *tef*1: AF348107, AF348108.

Trichoderma capillare Samuels & Kubicek, *in* Samuels & al., Fungal Divers. 55: 83. 2012.
Typus: [dried culture] (BPI 882292).
Ex-type culture: CBS 130629
Representative sequences: *tef*1: JN182283, JN175585; *rpb*2: JN182312, JN175530.

Trichoderma caribbaeum Samuels & Schroers, *in* Samuels & al., Stud. Mycol. 56: 105. 2006.
Typus: [dry culture] (BPI 746700B).
Ex-type culture: G.J.S. 97-3 = CBS 119093
(=) *Hypocrea caribbaea* Samuels & Schroers, *in* Samuels & al., Stud. Mycol. 56: 105. 2006.
Typus: [specimen] (BPI 746700).
Representative sequences: *tef*1: DQ284977, *rpb*2: FJ442723.

Trichoderma caribbaeum Samuels & Schroers var. ***aequatoriale*** Samuels & H.C. Evans, *in* Samuels & al., Stud. Mycol. 56: 105. 2006.
Typus: [dry culture] (BPI 870965).
Ex-type culture: DIS 320c = CBS 119055 = IMI 393638
Representative sequences: *tef*1: DQ289010, *rpb*2: KT028596.

***Trichoderma catoptron** P. Chaverri & Samuels, Stud. Mycol. 48: 43. 2004 ["2003"], **nom. cons. prop.**
Typus: [dry culture] (BPI 8543653).
(=) *Hypocrea catoptron* Berk. & Broome, Grevillea 12: 100. 1873.
Lectotypus (*vide* Chaverri & Samuels, Stud. Mycol. 48: 44. 2004): [Sri Lanka] Central Province: Dolosbagy, Feb. 1868, No. 557 (K).
Epitypus (*vide* Chaverri & Samuels, Stud. Mycol. 48: 45. 2004): [specimen) (BPI 843645).
Ex-epitype culture: G.J.S. 02-76 = CBS 114232 = DAOM 232830.
(=) *Hypocrea sulfurella* Kalchbr. & Cooke, Grevillea 9(49): 26. 1880.
Typus: SOUTH AFRICA: *Natal*, Inanda, on decaying *Eucalyptus* bark, 1880, J.M. Wood No. 178 (K).
(=) *Hypocrea flavovirens* Berk., Grevillea 12: 100. 1883.
Typus: INDIA: Neilgherries, Wellington, on decaying bark (K, ex herb. M.J. Berkeley).
Representative sequences: *tef*1: AY737726, *rpb*2: AY391900.
Note: The protologue cites three specimens, *viz*. no. 5 in part, and no. 557, both from Sri Lanka(*Central Province*, Feb 1865), and Dolosbagey. Four specimens in K are noted as being 'type,' including these three collections and no. 557 *bis.* The Dolosbagey specimen was described later as *H. subrufa* Berk. & Cooke (Cooke 1884). The other three specimens are apparently the same species. Chaverri & Samuels (2003) designated the specimen '557' as lectotype and redescribed and illustrated the species. They also described its asexual morph as *Trichoderma catoptron* and epitypified the species with the recent Sri Lankan specimen from which the type of *H. catoptron* was derived. Samuels (2014) proposed conservation of *T. catoptron* over *H. catoptron, H. sulfurella,* and *H. flavovirens. Trichoderma catoptron* is known only from South Africa, India and Sri Lanka. It occurs on bark of decaying trees, less frequently on decorticated wood and resupinate basidiomycetes. Chaverri & Samuels (2003) redescribed the species. It is most closely related to *T. ceraceum* Chaverri & Samuels, *T. cinnamomeum* Chaverri & Samuels and *T. stramineum* (Chaverri & Samuels 2003).

Trichoderma ceciliae Jaklitsch & Voglmayr, Stud. Mycol. 80: 44. 2015.
Typus: [specimen] (WU 33325).
Ex-type culture: CBS 130010
Representative sequences: *tef*1: KJ665444, *rpb*2: KJ665444.

Trichoderma ceraceum P. Chaverri & Samuels, Stud. Mycol. 48: 45. 2004 ["2003"].
Typus: [dry culture] (BPI 843654).
(=) *Hypocrea ceracea* P. Chaverri & Samuels, Stud. Mycol. 48: 45. 2004 ["2003"].
Typus: [specimen] (BPI 737722).
Ex-type culture: CBS 114245 = DAOM 232831 = ATCC MYA-3222.
Representative sequences: *tef*1: AY937437, *rpb*2: AF545508.

Trichoderma ceramicum P. Chaverri & Samuels, Stud. Mycol. 48: 47. 2004 ["2003"].
Typus: [dry culture] (BPI 843655).
Ex-type culture: G.J.S. 88-70 = CBS 114576,
(=) *Hypocrea ceramica* Ellis & Everh., North Amer. Pyrenomyc. p. 85. 1892.
Typus: USA: *Connecticut*: West Haven, on decaying limb of *Juniperus*, Nov. 1888, R. Thaxter (NY 00965610).
Representative sequences: *tef*1: AY737738, *rpb*2: AF545510.

Trichoderma cerebriforme (Berk.) Samuels, **comb. nov.**
MycoBank MB812055
(≡) *Hypocrea cerebriformis* Berk., J. Linn. Soc. Bot. 13: 177. 1872, non Beeli, Bull. Soc. Roy. Bot. Belg.: 58: 204. 1926.
Typus: "*Hypocrea cerebriformis* B., AUSTRALIA, M & B" (K, ex herb. M.C. Cooke 1885).
Representative culture: G.J.S. 85-245 = CBS 139045.
Representative sequence: *tef*1: KP109824.
Note: *Trichoderma cerebriforme* is distinctive because of the stout stipe and convoluted cap of the teleomorph. Similar species having stipitate/capitate stromata include *H. brevipes* Mont., *H. poronioidea* Möller, and *H. capitata* Samuels & Lodge (Samuels & Lodge 1996). *H. petersii* Berk. & M.A. Curtis and *H. peltata* (Jungh.) Berk. have large, centrally attached stromata, the stipe being greatly reduced. Doi (1976) reported but did not illustrate a *T.* cf. *longibrachiatum*-like asexual morph for *T. cerebriforme* based on collections made in Peru. Rogerson *et al.* (1990) reported the species from central Brazil (Roraima). The culture cited above was reported by Doi (in Samuels *et al.,* 1990) from an Indonesian specimen (BPI 881335 ex NY). The sequence cited above was derived from this Indonesian collection; it indicates that *T. cerebriforme* may be a member of the Viride clade. Whether any of these collections made outside of Australia are actually *T. cerebriformis* remains to be proven, but the name is being used and for this reason we place it in *Trichoderma*.

Trichoderma cerinum Bissett, C.P. Kubicek & Szakác, *in* Bissett & al., Can. J. Bot. 81: 581. 2003.
Typus: [dry culture] (DAOM 230012).
Ex-type culture: CBS 230012.
Representative sequences: *tef*1: AY605802, AY937443; *rpb*2: KF134788.

Trichoderma chlorosporum P. Chaverri & Samuels, Stud. Mycol. 48: 49. 2004 ["2003"].
Typus: [dry culture] (BPI 843656).
Ex-type culture: G.J.S. 88-33 = CBS 114231 = DAOM 232832 = ATCC MYA-3223.
(=) *Hypocrea chlorospora* Berk. & M.A. Curtis, Grevillea 4: 14. 1875.
Typus*:* [UNITED STATES: *North Carolina*:] 'New York,' mountains on decorticated wood, *Curtis 4466* (K 114744).
Epitypus (*vide* Chaverri & Samuels, Stud. Mycol. 48: 51.2004) [specimen] UNITED STATES,, Connecticut, Tolland County, Salmon River State Park, on wood, 17 Sep 1988, *R. Lowen 616* (NY No. 01197411).
Representative sequences: *tef*1: AY737737, AY391966, AY391968; *rpb*2: AY391903, AY391906

Trichoderma christiani Jaklitsch & Voglmayr, Stud. Mycol. 80: 46. 2015.
Typus: [specimen] (WU 33379).
Ex-type culture: CBS 132572.
Representative sequences: *tef*1: KJ665438, KJ665439; *rpb*2: KJ665243, KJ665244.

Trichoderma chromospermum P. Chaverri & Samuels, Stud. Mycol. 48: 51. 2004 ["2003"].
Typus: [dry culture] (BPI 843683).
Ex-type culture: G.J.S. 94-68 = CBS 114577.
(=) *Hypocrea chromosperma* M.A. Curtis & Peck, Ann. Rep. NY State Mus. Nat. Hist. 29: 56. 1878.
Lectotypus (*vide* Chaverri & Samuels, Stud. Mycol. 48: 52. 2004): USA: *New York*: Lewis County, Croghan, on blackened decorticated wood, Sep 1878 (?), *C.H. Peck* (NYS No. 3461).
Epitypus (*vide* Chaverri & Samuels, Stud. Mycol. 48: 52. 2004): [specimen] (BPI 749363).
Representative sequences: *tef*1: AY391973, AY391974, AY737728; *rpb*2: AY391912, AY391913.

Trichoderma cinnamomeum P. Chaverri & Samuels, Stud. Mycol. 48: 54. 2004 ["2003"].
Typus: [dry culture] (BPI 843658).
(=) *Hypocrea cinnamomea* P. Chaverri & Samuels, Stud. Mycol. 48: 54. 2004 ["2003"].
Typus: [specimen] (BPI 744716).
Ex-type culture: G.J.S. 97-230 = CBS 114235 = ATCC MYA-3224 = DAOM 232833.
Representative sequences: *tef*1: AY737732, AY391979; *rpb*2: AY391918, AY391920.

Trichoderma citrinoviride** Bissett, Can. J. Bot. 62: 926. 1984, **nom. cons. prop.
Typus: [dry culture] (DAOM 172792).
Ex-type culture: DAOM 172792 = CBS 258.85.
(=) *Sphaeria schweinitzii* Fr., Elench. Fung. 2: 60. 1828.
(≡) *Hypocrea schweinitzii* (Fr.) Sacc., Syll. Fung. 2: 522. 1883.
Lectotypus (vide Samuels et al. in Stud. Mycol. 41: 48. 1998): [USA: ? *Pennsylvania*:], on wood, "*Sphaeria lobata* Schw.," herb. Currey (K).
Representative sequences: *tef*1: FJ860964, *rpb*2: JN175544
Note: Samuels (2014) proposed conservation of *T. citrinoviride* over *H. schweinitziii* (*S. schweinitzii*), *S. contorta* Schwein., *H. minima* Sacc. & Ellis, and *H. repanda* Fuckel.

Trichoderma citrinum (Pers.) Jaklitsch, W. Gams & Voglmayr, *in* Jaklitsch & Voglmayr, Mycotaxon 126: 147. 2014.
(≡) *Sphaeria citrina* Pers., Obs. mycol. 1: 68. 1796 : Fries, Syst. Mycol. 2: 337. 1823.
(≡) *Hypocrea citrina* (Pers.) Fr., Summa Veg. Scand. 2: 383. 1849.
Neotypus (*vide* Overton & al., Stud. Mycol. 56: 16. 2006): [specimen] BELGIUM: Hestreux, near Eupen, on leaf litter including pine needles, Oct 1985, *W. Gams 4031* (herb. CBS 894.85).
Ex-neotype culture: CBS 853.70.
(=) *Trichoderma lacteum* Bissett, Can. J. Bot. 69: 2367. 1992.
Typus: [dry culture] (DAOM 167644).
(=) *Sphaeria lactea* Fr., Obs. mycol. 1: 141 (1815).
(≡) *Hypocrea lactea* (Fr.) Fr., Summa veg. Scand. 2: 383. 1849.
Epitypus (*T. lacteum, vide* Jaklitsch & Voglmayr *in* Mycotaxon 126: 47. 2014): [specimen] *W. Gams 4031* (CBS).
Ex-epitype culture (*T. lacteum*): CBS 894.85.
Representative sequences: *tef*1: FJ860631, DQ835411; *rpb*2: FJ179630, AF545561.

Trichoderma compactum Z.F. Yu & K.Q. Zhang, *in* Yu & al., Antonie van Leeuwenhoek 92: 104. 2007.
Typus: [dried culture] CHINA: *Yunnan Prov.*: near Yuxi County, isolated from tobacco rhizosphere, Jun 2002, Z.F Yu (YMF 1.01693 [Key Laboratory of Yunnan Microbiology Fermentation]).
Ex-type culture: CBS 121218.
Representative sequences: *tef*1: KF134798, *rpb*2: KP115276, KF134789

Trichoderma composticola Samuels & Jaklitsch., *in* Jaklitsch & al., Persoonia 33: 1391. 2013.
Typus: [metabolically inactive culture] (CBS 133497).
Ex-type culture: CBS 133497.
Representative sequences: *tef*1: KC285631, *rpb*2: KC285754.

Trichoderma corneum (Pat.) Jaklitsch & Voglmayr, Mycotaxon 126: 147. 2013.
(≡) *Hypocrea cornea* Pat., J. Bot. 4: 64. 1890.
Typus: TONKIN: Forests of Mt. Bavi, on decorticated wood, May 1886, Balansa (K).
Ex-type culture: None.
Epitypus (***hic designatus***, MBT 202238): [specimen] THAILAND (BPI 745564). Ex-epitype culture: CBS 100541 = G.J.S. 97-75.

(=) *Hypocrea cincta* Petch, Ann. Roy. Bot. Gard. Peradeniya 9: 231. 1925.
Typus: SRI LANKA, Hakgala, on decorticated wood, Mar. 1922 (K No. 6373).
Representative sequence: *tef*1: AY937431.
Note: Chaverri & Samuels (2003) redescribed this species based on their study of the types of *H. cornea* and *H. cincta* Petch. Sequences deposited in GenBank that were derived from Thai collections identified as *H. cornea* are diverse. Of the cultures linked to sequences, only the one cited above was deposited in CBS; it was derived from ascospores of BPI 745564, identified as *H. cornea*. Because the stroma of this collection is morphologically consistent with the type of *H.* cornea, and because of the proximity of Thailand to Tonkin [Vietnam], we designate this Thai collection as epitype of *H. cornea.*

Trichoderma cornu-damae (Pat.) Z.X. Zhu & W.Y. Zhuang, Mycosystema 33: 1207. 2014.
(≡) *Hypocrea cornu-damae* Pat., Bull. Soc. Mycol. Fr.11: 198. 1895.
(≡) *Podostroma cornu-damae* (Pat.) Boedijn, Bull. Jard. bot. Buitenz, 3 Sér. 13: 274. 1934.
Typus: CHINA: *Tibet*: Su-tschuen (FH).
Epitypus (***hic designatus***, MBT 201071): [*Japan*] "TNS.D-44, Hirakura, Mie, 7-IX-1965, Y. Doi," (TNS-F-190012).
Ex-epitype culture: NBRC 9005 = IFO 9005 = G.J.S. 06-03.
Note: Doi (1973) illustrated gliocladium-like conidiophores for this species. Among others, he cited the Japanese collection TNS-F-190012, from which a culture (NBRC 9005 = IFO 9005 = G.J.S. 06-03) was derived, and which we designate here as epitype. ITS sequences derived from this culture indicate a relationship to *T. brevicompactum*, as do 5.8S ribosomal RNA, internal transcribed spacer 2, and 28S ribosomal RNA partial sequences of the Japanese strain 105-491 (GenBank No. AB509797; Forestry and Forest Products Research Institute, Kansai Research Center, Kyoto).

Trichoderma costaricense (P. Chaverri & Samuels) P. Chaverri, Jaklitsch & Voglmayr, *in* Jaklitsch & Voglmayr, Mycotaxon 126: 147. 2013.
(≡) *Hypocrea costaricensis* P. Chaverri & Samuels, Stud. Mycol. 48: 58. 2004 ["2004"].
Typus: [specimen] (INB 0003527695).
Ex-type culture: P.C. 21 (Lost).
Representative DNA sequences: *tef1*: AY737741, AY391980; *rpb2*: AY391921.
Note: There are apparently no live cultures of *T. costaricense*.

Trichoderma crassum Bissett, Can. J. Bot. 69: 2376. 1992 ["1991"].
Typus: [dry culture] (DAOM 164916).
Ex-type culture: JN175544
Representative sequences: *tef*1: EU280048 + AF534615; *rpb*2: AF545542.
Note: The link of *T. crassum* to *H. crassa* P. Chaverri & Samuels (Chaverri & Samuels 2003) is incorrect; see *T. neocrassusm.*

Trichoderma cremeoides Jaklitsch & Voglmayr, Stud. Mycol. 80: 49. 2015.
Typus: [specimen] (WU 33300).
Ex-type culture: CBS 131486.
Representative sequences: *tef*1: KJ665456, KJ665460; *rpb*2: KF134790, KJ665254.

Trichoderma cremeum P. Chaverri & Samuels, Stud. Mycol. 48: 63. 2004 ["2003"].
Typus: [dry culture] (BPI 843659).
(=) *Hypocrea cremea* P. Chaverri & Samuels, Mycologia 95: 1115. 2004 ["2003"].
Typus: [specimen] (BPI 1112894).
Ex-type culture: G.J.S. CBS 111146 = DAOM 231312 = ATCC MYA-2862.
Representative sequences: *tef*1: AY737736, *rpb*2: AF545511.

Trichoderma crystalligenum Jaklitsch, *in* Jaklitsch & al., Mycologia 98: 502. 2006.
Typus: [dry culture] (WU 24041a).
(=) *Hypocrea crystalligena* Jaklitsch, *in* Jaklitsch & al., Mycologia 98: 502. 2006.
Typus: [specimen] (WU 24041).
Ex-type culture: CBS 118980.
Representative sequences: *tef*1: DQ345342, *rpb*2: DQ345347.

Trichoderma dacrymycellum Jaklitsch, Stud. Mycol. 63: 37. 2009.
Typus: [specimen] (WU 29042a).
Ex-type culture: None.
Representative culture: None.
Representative sequences: *tef*1: FJ860633, *rpb*2: FJ860533.
(=) *Hypocrea* dacrymycella Cooke & Plowr., Grevillea 12: 100. 1884.
Typus: UK: *Norfolk*: Brandon, on Scotch pine (= *Pinus sylvestris*), 7 Nov. 1881, C.B. Plowright (K (m) 114743).
Epitypus (*vide* Jaklitsch, Stud. Mycol. 67: 40. 2009): [specimen] (WU 29042).
(=) *Hypocrea viscidula* W. Phillips & Plowr., Grevillea 13: 79. 1885.
Lectotypus (*vide* Jaklitsch, Stud. Mycol. 67: 40. 2009): [specimen] (K 133498).
(=) *Creopus velenovskyi* Z. Moravec, Česká Mykol. 10: 88. 1956.
Typus: CZECH REPUBLIC: Central Bohemia, Mnichovice near Prague; on *Picea abies* in cavities of a stump, Nov. 1934; J. Velenovský 29/1947 (PRM No. 153288).
Note: *Trichoderma dacrymycellum* has not been grown in pure culture. The asexual morph of *T. dacrymycellum* described by Jaklitsch (2009) is based on frequent association of the asexual morph with stromata agreeing with type material of *H. dacrymycella*. Gene sequences for this species reported by Jaklitsch (2009) were derived from stromata.

Trichoderma danicum (Jaklitsch) Jaklitsch & Voglmayr, Mycotaxon 126: 148. 2013.
(≡) *Hypocrea danica* Jaklitsch, Stud. Mycol. 63: 41. 2009.
Typus: [specimen] (WU 29046).
Ex-type culture: CBS 121273.

Representative sequences: *tef*1: FJ860634, *rpb*2: FJ860534.

Trichoderma decipiens (Jaklitsch, K Põldmaa & Samuels) Jaklitsch & Voglmayr, Mycotaxon 126: 148. 2013.
(≡) *Hypocrea decipiens* Jaklitsch & al., Mycologia 100: 981. 2008.
Typus: [specimen] (BPI 747356).
Ex-type culture: CBS 121307.
Representative sequences: *tef*1: FJ860635, EF550995; *rpb*2: DQ835520.

Trichoderma delicatulum Jaklitsch, Fungal Divers. 48: 135. 2011.
Typus: [dry culture] (WU 29225a).
Ex-type culture: CBS 120631.
(=) *Protocrea delicatula* Tul. & C. Tul., Sel. Fung. Carp. 3: 33. 1865.
Lectotypus (*vide* Rossman & al., Stud. Mycol. 42: 94. 1999): France: Clamart, 4 Jan. 1860, M.L.-R. Tulasne, PC 93188 (PC).
Epitypus *vide* Jaklitsch, Fungal Divers. 48: 139. 2011) [specimen] (WU 29225).
Ex-epitype culture: CBS 120631.
Representative sequences: *tef*1: FJ860636, *rpb*2: FJ860535.

***Trichoderma deliquescens** (Sopp) Jaklitsch, Fungal Divers. 48: 176. 2011.
(≡) *Gliocladium deliquescens* Sopp, Monogr. *Penicillium*: 89. 1912.
Neotypus (*vide* Jaklitsch, Fungal Divers. 48: 179. 2011): [dry culture] (WU 29232a].
(=) *Sphaeria gelatinosa* var. *lutea* Tode, Fungi Mecklenb. 2: 48. 1791, as 'α'.
(≡) *Hypocrea lutea* (Tode : Fr.) Petch, J. Bot. 75: 231. 1937.
Lectotypus (*vide* Samuels in Taxon 63: 937. 2014): [icon in] Tode, Fung. Mecklenb. Sel. 2: t. XVI, fig. 123a–f. 1791.
Epitypus (*vide* Jaklitsch, Fungal Divers. 48:179. 2011): [specimen] UK: (WU 29232).
Ex-epitype culture: CBS 121131.
(=) *Gliocladium viride* Matr., Bull. Soc. Mycol. Fr. 9: 251. 1893.
Typus: [specimen] "…trouvé par moi sur un *Clitocybe* en décomposition, ramassé dans un bois près de Bonnières (Seine-et-Oise) en avril dernier." *L. Matruchot*.
Representative sequences: *tef*1: FJ860644, *rpb*2: FJ179609.
Note: *Gliocladium viride* Matr. is recognized to be an older facultative synonym of *G. deliquescens* Sopp (e.g., Jaklitsch 2011) but the existence of the name *Trichoderma viride* Pers. 1791 precludes transfer of the epithet to *Trichoderma.* At the rank of species, the name *Gliocladium deliquescens* has priority from 1912, while the sanctioned (Fries, Syst. Mycol. 2: 336. 1823) and older epithet '*lutea*' dates from 1791, but only at an undefined infraspecific rank; at species rank it dates from 1937. However, because *G. deliquescens* (≡ *T. deliquescens*) is typified by an asexual morph, while *H. lutea* is typified by a teleomorph, and both are in current use, Art. 57.2 requires that a proposal to conserve *H. lutea* be submitted and rejected before adopting the older asexual morph-typified name (Samuels 2014).

Trichoderma dingleyae Samuels & Dodd, *in* Samuels & al., Stud. Mycol. 56: 108. 2006.
Typus: [dry culture] "Typus *anamorphosis* T. dingleyae *cultura sicca ex ascospora oriens PDD 83838"* (PDD 83838).
(=) *Hypocrea dingleyae* Samuels & Dodd, *in* Samuels & al., Stud. Mycol. 56: 108. 2006.
Typus: [specimen] (PDD 83838).
Ex-type culture: CBS 119056.
Representative sequences: *tef*1: AF348117, DQ289008, J665467; *rpb*2: EU341803, KJ665257.

Trichoderma dorotheae Samuels & Dodd, *in* Samuels & al., Stud. Mycol. 56: 112. 2006.
Typus: [dry culture] NEW ZEALAND "… *holotypus asexual morphosis* T. dorotheae *cultura sicca ex ascospora oriens PDD 83839"*) (PDD 83839).
(=) *Hypocrea dorotheae* Samuels & Dodd in Samuels & al., Stud. Mycol. 56: 112. 2006.
Typus: [specimen] (PDD 83839).
Ex-type culture: G.J.S. 99-202 = CBS 119089 = ICMP 16288.
Representative sequences: *tef*1: DQ307536, *rpb*2: EU248602.

Trichoderma effusum Bissett, C.P. Kubicek & Szakács, *in* Bissett & al., Can. J. Bot. 81: 575. 2003.
Typus: [dry culture] (DAOM 23000).
Ex-type culture: DAOM 230007.
Representative sequences: *tef*1: AY937419, KJ665473; *rpb*2: KJ665260.

Trichoderma eijii C. S. Kim & N. Maekawa, *in* Kim & al., Mycol. Prog. 12: 744. 2012.
Typus [specimen] (TUMH 40457)/
Ex-type culture: TUFC 100002 = CBS 133190.
Representative sequences: *tef*1: JX684011. *rpb*2: X238484.

Trichoderma endophyticum F.B. Rocha, Samuels & P. Chaverri, *in* Chaverri & al., Mycologia 107: 573. 2015.
Typus: [metabolically inactive culture] (CBS 130729).
Ex-type culture: DIS 217a = CBS 130729 = IMI 395208.
Representative sequences: *tef*1: FJ463319, HQ022776, FJ967822; *rpb*2: FJ442775, FJ442721.

Trichoderma epimyces Jaklitsch, *in* Jaklitsch & al., Mycologia 100: 808. 2008.
Typus: [dry culture] (WU 28237a).
Ex-type culture: CBS 120524.
(=) *Hypocrea epimyces* Sacc. & Pat., *in* Patouillard, Tabulae Analyticae Fungorum 4: 175. 1891.
Typus: FRANCE: Jura, Poligny, on *Polyporus nigricans*, Jul 1881, *N. Patouillard* (PAD); epitypus (*vide* Jaklitsch, Stud. Mycol. 63: 46. 2009): [specimen] WU 28237.
(≡) *Hypocrea vinosa* Pat., Rev. Mycol. Toulouse 3(12): 11. 1881 *nom. Illeg. non* Cooke 1879.
Typus: [specimen] "Isolé en groupe sur les deux faces du *Polyporus nigricans*, Poliguy (Jura) Juillet 1881." *N.T. Patouillard* (? PAD, FH).
Representative sequences: *tef*1: X238484, *rpb*2: EU498360.

Trichoderma erinaceus Bissett, C.P. Kubicek & Szakács, *in* Bissett & al., Can. J. Bot. 81: 583. 2003. [as '*erinaceum'*, to be corrected as masculine for a noun in apposition; the hedgehog '*erinaceus*' cannot be used as an adjective].
Typus: [dry culture] (DAOM 230019).
Ex-type culture: DAOM 230019.
Representative sequences: *tef*1: AY7508880, DQ109547; *rpb*2: EU248603, EU248604.
Note: Unidentified *Hypocrea rufa*-like stromata collected once in Sri Lanka (BPI 871397, culture G.J.S. 02-103 = CBS 126393; *tef*1: KR873098, *rpb*2: KR870399).

Trichoderma estonicum P. Chaverri & Samuels, Stud. Mycol. 48: 66. 2004 ["2003"].
Typus: [dry culture] (BPI 843661).
(=) *Hypocrea estonica* P. Chaverri & Samuels, Mycologia 95: 111. 2003 [6 Feb 2004].
Typus: [specimen] (BPI 744577). Isotypus: [specimen]: (TAA 161844).
Ex-type culture: G.J.S. 96-129 = CBS 111147 = ATCC MYA-2864.
Representative sequences: *tef*1: AY737733, AF534604, FJ860637; *rpb*2: AF545514, FJ860536.

Trichoderma eucorticioides (Overton) Jaklitsch & Voglmayr, Mycotaxon 126: 148. 2013.
(≡) *Hypocrea corticoides* Speg., An. Mus. Nac. Hist. Nat. Buenos Aires 23: 75. 2 Apr 1912, non Berk. & Broome (J. Linn. Soc. Bot. 14: 111. 9 Oct 1873) *nec* Ellis & Everh. (J. Mycol. 1: 140. 1885).
(≡) *H. eucorticioides* Overton, I Overton & al., Stud. Mycol. 56: 55. 2006.
Typus: ARGENTINA: Entre Rios, Ibicuy, 28 Jun 1911, *C. Spegazzini 911* (LPS 1719).
Ex-type culture: None. Representative culture (G.J.S. 99-61) lost.
Representative sequences: *tef*1: DQ835502, DQ835574; *rbp*2: DQ835520.
Note: Overton *et al.* (2006) noted that the type specimen of *H. corticioides* is overmature and in poor shape. They cited two additional collections, respectively from Costa Rica and Venezuela. The Costa Rican specimen was cultured (G.J.S. 99-61) and the culture was sequenced, but the culture was subsequently lost. Gene sequences for this specimen were deposited in GenBank (Jaklitsch & Voglmayr 2014a) and this is the basis of our understanding of the species. Overton *et al.* (*ibid*.) also recognized the earlier published *H. corticioides* Berk. & Broome and introduced the replacement name, *H. eucorticioides* for Speg.'s species. The type specimen of *H. corticioides* Berk. & Broome (K!) is *Stilbocrea macrostoma* (Berk. & M.A. Curtis) Höhnel. *Hypocrea corticioides* Ellis & Everh. was renamed as *H. corticiicola* Ellis & Everh. (N. Am. Pyren.: 83. 1892). The type packet of *H. corticiicola* (NY 00965604) was annotated by Y. Doi (1974) as "… A young form of a species of *Protocrea?* or a species of Aphyllophorales?" and G. J. Samuels in 2001 annotated the specimen: "… NOT *Hypocreopsis,* possibly *Protocrea*. Apparently the same as *H. subcarnea* Ellis & Everh. 1887."

Trichoderma europaeum Jaklitsch & Voglmayr, Stud. Mycol. 80: 52. 2015.
Typus: [specimen] (WU 29250).
Ex-type culture: CBS 121276.
Representative culture: CBS 901.72.
Representative sequences: *tef*1: AY392009, FJ179574, KJ665476; *rpb*2: FJ179610, KJ665264, AY481588.

Trichoderma euskadiense Jaklitsch & Voglmayr, Stud. Mycol. 80: 53. 2015.
Typus: [specimen] (WU 33367).
Ex-type culture: CBS 130013.
Representative sequences: *tef*1: KJ665492, *rpb*2: KJ665269.

Trichoderma evansii Samuels, *in* Samuels & Ismaiel, Mycologia 101: 149. 2009.
Typus: [dry culture] (BPI 878744).
Ex-type culture: CBS 123079.
Representative sequences: *tef*1: EU883563, *rpb*2: EU883558.

Trichoderma fertile Bissett, Can. J. Bot. 69: 2382. 1992 ["1991"].
Typus: [dry culture] (DAOM 167161).
Ex-type culture: DAOM 167161.
Representative culture: DAOM167070.
Representative sequences: *tef*1: AY605801, AF534617; *rpb*2: AF545545, AF545546.

Trichoderma flagellatum Mullaw, C.P. Kubicek & Samuels, *in* Samuels & al., Fungal Divers. 55: 89. 2012.
Typus: [dry culture] (BPI 882293).
Ex-type culture: CBS 130626.
Representative sequences: *tef*1:FJ763149, FJ763184; *rpb*2: JN258688, KR297247.

Trichoderma flaviconidium (P. Chaverri, Druzhinina & Samuels) Jaklitsch & Voglmayr, Mycotaxon 126: 148. 2013.
(≡) *Hypocrea flaviconidia* P. Chaverri, Druzhinina & Samuels, *in* Druzhinina & al., Stud. Mycol. 50: 404. 2004.
Typus: Costa Rica, Coto Brus, Las Tablas, Sendero Siénega, elevation 1500 m, on bark; 29 Jun. 1999, *G.J. Samuels (8475), P. Chaverri, H.L. Chamberlain* (INB 3862698, Isotype BPI 746538).
Ex-type culture: Lost, G.J.S. 99-51.
Epitypus (***hic designatus***, MBT 202325): [specimen] COSTA RICA (BPI 746540). Ex-epitype culture: CBS 130688 = G.J.S. 99-49.
Representative sequences: *tef*1: AY665710, 665711; *rpb*2: DQ883557
Note: The authors of *H. flaviconidia* noted that of the three collections of this species, only one was suitable to serve as the type; unfortunately the culture derived from that collection was no longer viable. Two paratypes were cited and their cultures were sequenced and preserved in CBS (CBS 130688, 116238). In order to stabilize this name, we designate one of them as epitype.

Trichoderma flavipes (Peck) Seifert, Jaklitsch & Voglmayr, *in* Jaklitsch & Voglmayr, Mycotaxon 126: 148. 2014.
(≡) *Stilbum flavipes* Peck, Ann. Rep. New York State Mus. Nat. Hist. 31: 45. 1878.
(≡) *Stilbella flavipes* (Peck) Seifert, Stud. Mycol. 27: 68. 1985.
Typus: [specimen] "Decaying wood. Center. Oct." (NYS 1215).
Ex-type culture: None.
(=) *Hypocrea cinereoflava* Samuels & Seifert in Seifert & Samuels, Mycologia 89: 515. 1997.
Typus: USA: *Alabama*, Franklin Co., Bear Creek Education Center, on decorticated wood, *G.J. Samuels, C.T. Rogerson & S. M. Huhndorf* (BPI 802847).
Ex-type culture: G.J. S. 92-102 = DAOM 22238 = CBS 123070.
Representative sequences: *tef*1: DQ834454, *rpb*2: DQ834461.

Trichoderma floccosum Samuels, *in* Samuels & Ismaiel, Mycol. Prog. 11: 234. 2011.
Typus: [dry culture] (BPI 871616).
Ex-type culture: G.J.S. 01-238 = CBS 124372.
Representative sequences: *tef*1: HQ342218, *rpb*2: HQ342281.

Trichoderma foliicola (Jaklitsch & Voglmayr) Jaklitsch & Voglmayr, Mycotaxon 126: 149. 2014 ["2013"].
(≡) *Hypocrea foliicola* Jaklitsch & Voglmayr, Mycologia 104: 1218. 2012.
Typus: [specimen] (WU 31611) (ex-type culture CBS 130008 = Hypo 645).
Ex-type culture: CBS 130008.
Representative sequences: *tef*1: JQ685862, *rpb*2: JQ685876.

Trichoderma fomiticola Jaklitsch, Stud. Mycol. 63: 50. 2009.
Typus: [dry culture] (WU 29050a).
(=) *Hypocrea fomiticola* Jaklitsch, Stud. Mycol. 63: 50. 2009.
Typus: [specimen] (WU29050).
Ex-type culture: CBS 121136.
Representative sequences: *tef*1: FJ860639, *rpb*2: FJ860538.

Trichoderma gamsii Samuels & Druzhinina, *in* Samuels & al., Stud. Mycol. 56: 168. 2006.
Typus: [dry culture] (BPI 872183).
Ex-type culture: G.J.S. 06-09 = CBS 120075.
Representative sequences: *tef*1: DQ307541, DQ841722; *rpb*2: JN133561.

***Trichoderma gelatinosum** P. Chaverri & Samuels, Stud. Mycol. 48: 68. 2003 ["2004"].
Typus: [dry culture] (BPI 747556).
Ex-type culture: CBS 114246 = DAOM 232835.
(=) *Sphaeria gelatinosa* Tode, Fungi Mecklenb. 2: 48. 1791 : Fr., Syst. Mycol. 2: 336. 1823.
(≡) *Hypocrea gelatinosa* (Tode : Fr.) Fr., Summa Veg. Scand. p. 383. 1849.
Typus: [icon] Tab. 123 a-d, 124 a-f in Tode, Fungi Mecklenb. 2. 1791.
Epitypus (vide Chaverri & Samuels in Stud. Mycol. 48: 70. 2004): [specimen] AUSTRIA (BPI 747556). Ex-epitype culture: CBS 114246.
(=) *Sphaeria cupularis* Fr., Linnaea 5: 539. 1830.
(≡) *Hypocrea cupularis* (Fr.) Petch, Trans. Brit. Mycol. Soc. 21: 293. 1838.
Neotypus (*vide* Chaverri & Samuels, Stud. Mycol. 48: 70. 2004): "*Hypocrea cupularis* Fr.? nondum evoluta, Ogotia, Stenh." (UPS F-07181, 133487).
(=) *Hypocrea moriformis* Cooke & Massee, Grevillea 12: 3. 1888. *Fide* Petch (1938).
Representative sequences: *tef*1: AY391983, FJ179569; *rpb*2: AY391924, FJ179604.
Note: The type of *T. gelatinosum* was derived from ascospores of a collection made in Austria; this collection is the epitype of *H. gelatinosa*. The culture from that specimen was deposited (CBS 114246) and sequenced (Chaverri & Samuels 2003). The name *T. gelatinosum* needs protection over *Sphaeria cupularis* as it is Tode´s "*gelatinosa*" not Chaverri & Samuels´ "*gelatinosum*" that was sanctioned, unless the proposal of Hawksworth & al. (2013; Hawksworth 2015) is adopted when the citation in *Trichoderma* would become "(Tode) P. Chaverri & Samuels".

Trichoderma ghanense Yoshim. Doi, Y. Abe & Sugiyama, Bull. Nat. Sci. Mus. Tokyo 13: 3. 1987.
Typus: [dry culture] TNS-F-237181.
Ex-type culture: G.J.S. 95-137 = ATCC 208858 = IAM 13109.
(=) *Trichoderma parceramosum* Bissett, Can. J. Bot. 69: 2418. 1992 ["1991"].
(≡) *Trichoderma atroviride* Bissett, Can. J. Bot. 62: 930. 1984 *non* P. Karst.
Typus: [dry culture]: (DAOM 165773).
Representative sequences: *tef*1: AY 937423, *rpb*2: JN175559.

Trichoderma gillesii Samuels, *in* Samuels & al., Fungal Divers. 55: 91. 2012.
Typus: FRANCE: *Isle de la Réunion*: Dalazie, on dead wood, 11 March 2000, *G. Gilles*, comm. F. Candoussau 690 (BPI 882294).
Ex-type culture: CBS 130435.
Representative sequences: *tef*1: JN175583, *rpb*2: JN175527.

Trichoderma gliocladium Jaklitsch & Voglmayr, Stud. Mycol. 80: 55. 2015.
Typus: [specimen] (WU 32187).
Ex-type culture: CBS 130009.
Representative sequences: *tef*1: KJ665502, *rpb*2: KJ665271.

Trichoderma gracile Samuels & Szakács, *in* Samuels & al., Fungal Divers. 55: 94. 2012.
Typus: [dry culture] (BPI 882295).
Ex-type culture: CBS 130009.
Representative sequences: *tef*1: KJ665502, *rpb*2: KJ665271.

Trichoderma guizhouense Q.-R. Li, E.H.C. McKenzie & Yong Wang bis, *in* Q.-R. Li & al., Mycol. Prog. 12: 170. 2012.
Typus: [dry culture] (HGUPd0038).
Ex-type culture: HGUP 0038 = CBS 131803.

Representative sequences: *tef*1: JN215484, JX089585; *rpb*2: Q901400, JQ901401.

Trichoderma hamatum (Bonord.) Bain., Bull. Soc. Mycol. Fr. 22: 131. 1906.
(≡) *Verticillium hamatum* Bonord., Handb. Allg. Mykol. 97. 1851.
Lectotypus (*vide* Bissett, 1991): [icon] Bonorden, Handb. Allg. Mykol. 97, fig. 117. 1851.
Epitypus (***hic designatus***, MBT 201072): CANADA [dry culture] (DAOM 167057).
Ex-epitype culture: DAOM 167057.
Representative sequences: *tef*1: AF456911, AY750893; *rpb*2: AF545548.
Note: Bonorden did not cite a specific specimen in the protologue to *V. hamatum,* but his illustration (Fig. 117) can easily be interpreted as representing our modern concept of *T. hamatum*. Bissett (1991) noted the lack of type material and commented on Fig. 117, but he designated a neotype for this species. Under Art. 9.2 of ICN the illustration published with the protologue of *Verticillium hamatum* has to be adopted as lectotype of this species as it is a part of the "original material" in the sense of the ICN. The culture designated by Bissett (1991) as neotype for *T. hamatum* (DAOM 167057) should therefore be regarded as epitype of *V. hamatum*. Jaklitsch & Voglmayr (2014) described a teleomorph with yellow-brown to dull orange stromata and colorless ascospores.

Trichoderma harzianum Rifai, Mycol. Pap. 116: 38. 1969.
Neotypus (*vide* Gams & Meyer in Mycologia 90: 908. 1998): [dry culture] (CBS 226.95).
Ex-neotype culture: CBS 226.95.
Representative sequences: *tef*1: AF348101, AF348100, AF348092; *rpb*2: AF545549.
Note: *Trichoderma harzianum* has been known to be a species complex for several years (Chaverri *et al.,* 2003b; Druzhinina *et al.,* 2010). Chaverri *et al.* (2015) recognized several taxonomic species in the complex.

Trichoderma hausknechtii Jaklitsch & Voglmayr, Stud. Mycol. 80: 59. 2015.
Typus: [specimen] (WU 32168).
Ex-type culture: CBS 133493.
Representative sequences: *tef*1: KJ665515, *rpb*2: KJ665276.

Trichoderma helicolixii Jaklitsch & Voglmayr, Stud. Mycol. 80: 61. 2015.
Typus: [specimen] (WU 33410).
Ex-type culture: CBS 133499.
Representative sequences: *tef*1: KJ665517, *rpb*2: KJ665276.

Trichoderma helicum Bissett, C.P. Kubicek & Szakács, *in* Bissett & al., Can. J. Bot. 81: 575. 2003.
Typus: [dry culture] (DAOM 230022).
Ex-type culture: DAOM 230022.
Representative sequences: *tef*1: EU280055, *rpb*2: DQ087239.

Trichoderma hispanicum (Jaklitsch & Voglmayr) Jaklitsch & Voglmayr, Mycotaxon 126: 149. 2014 ["2013"].
(≡) *Hypocrea hispanica* Jaklitsch & Voglmayr, *in* Jaklitsch & al., Mycologia 104: 935. 2012.
Typus: [specimen] (WU 31606) (ex-type culture CBS 130540 = S453).
Ex-type culture: CBS 130540.
Representative sequences: *tef*1: JN715659, *rpb*2: JN715600.

Trichoderma hunua (Dingley) Jaklitsch & Voglmayr, Mycotaxon 126: 149. 2013.
(≡) *Hypocrea hunua* Dingley, Trans. Roy. Soc. New Zealand 79: 327. 1952.
Typus: [specimen] (PDD 1055).
Epitypus (***hic designatus***, MBT 201073): NEW ZEALAND [dry culture] (CBS H 13531).
Ex-epitype culture CBS 238.63.
Representative sequence: *tef*1: AF401011.
Note: The original gathering of *H. hunua* was not cultured. Joan Dingley sent a subsequently collected specimen and/or culture (*Dingley No. 5*) of this species to John Webster, who deposited the culture in CBS (CBS 238.63). A dry culture was made and deposited in CBS (H 13531). We designate the dry culture as epitype. This culture has been sequenced and included in phylogenetic analysis. Thus the name '*Hypocrea hunua'* is in current use and representative sequences have been deposited in GenBank. However, the specimen from which the culture CBS 238.63 was derived cannot be located (PDD) and is presumed lost. Thus its identity as *H. hunua* is uncertain. However, the phylogenetic results with Webster/Dingley's culture of this species (Kullnig-Gradinger *et al.* 2002) that is deposited in CBS is consistent with the morphology of part of the type that is now deposited in K (as IMI 50433). Sequences under this name are deposited in GenBank and Jaklitsch & Voglmayr (2014) have commented on its phylogenetic position in their list of *Trichoderma/Hypocrea* species based on this culture. Thus there is an established taxonomy and literature for *H./T. hunua*. Stability of this name is served by adopting an epitype as we do here, despite the uncertainty about the provenance of CBS 238.63.

Trichoderma inhamatum Veerkamp & W. Gams, Caldasia 13: 710. 1983.
Lectotypus (***hic designatus***, MBT 202387): [dry culture] COLOMBIA: *Dep. Meta*: Municipio de Villavicencio, 25 km from Villavicencio to Acacías (CBS H-18863).
Ex-type culture: CBS 273.78.
Representative sequences: *tef*1: AF348099, *rpb*2: FJ442725.
Note: Three dry cultures (CBS H-18863, CBS H-18864, CBS H-18865) were made from the same ex-type culture of *T. inhamatum* and deposited in the herbarium of CBS. We presume them all to be isotypes; accordingly, designate one of them as lectotype.

Trichoderma intricatum Samuels & Dodd, *in* Samuels & al., Stud. Mycol. 56: 112. 2006.
Typus: [dry culture] (BPI 745751B).
(=) *Hypocrea intricata* Samuels & Dodd, *in* Samuels & al., Stud. Mycol. 56: 112. 2006.

Typus: [specimen] (BPI 745751).
Ex-type culture: G.J.S. 97-88 = CBS 119059.
Representative sequences: *tef*1: AY376060, *rpb*2: EU241505.

Trichoderma istrianum Jaklitsch & Voglmayr, Stud. Mycol. 80: 63. 2015.
Typus: [specimen] (WU 33354).
Ex-type culture: CBS 130639.
Representative sequences: *tef*1: KJ665522., *rpb*2: KJ665280.

Trichoderma italicum Jaklitsch & Voglmayr, Stud. Mycol. 80: 65. 2015.
Typus: [specimen examined] (WU 33310).
Ex-type culture: CBS 132567.
Representative sequences: *tef*1: KJ665525, *rpb*2: KJ665282.

Trichoderma ivoriense Samuels, *in* Samuels & Ismaiel, Mycol. Prog. 11: 237. 2011.
Typus: [dry culture] (BPI 881030).
Ex-type culture: CBS 125734.
Representative sequences: *tef*1: HQ342217, *rpb*2: HQ342280.

Trichoderma junci Jaklitsch, Fungal Divers. 48: 13. 2011.
Typus: [dry culture] WU 29229a.
(=) *Hypocrea junci* Jaklitsch, Fungal Divers. 48: 13. 2011.
Typus: [specimen] (WU 292299).
Ex-type culture: CBS 120926.
Representative sequences: *tef*1: FJ860641, *rpb*2: FJ860540.

Trichoderma konilangbra Samuels, O. Petrini & C.P. Kubicek, *in* Samuels & al., Stud. Mycol. 41: 21. 1998.
Lectotypus (***hic designatus***, MBT 201074): [metabolically inactive culture] UGANDA, entrance to Ruwenzori National Park, elev. 1750 m, soil, 1993 (CBS 100808 = G.J.S. 96-145).
Ex-neotype culture: G.J.S. 96-145 = CBS 100808 = ATCC 208860 = IMI 378807.
Representative sequences: *tef*1: JN258681, *rpb*2: KJ665284.
Note: The protologue of *T. konilangbra* indicates that the type is a dry culture deposited in BPI (s.n.) however this material has evidently been lost. Accordingly we designate the metabolically inactive ex-type culture deposited as CBS 100808 as lectotype.

Trichoderma koningii Oudemans, *in* Oudemans & Koning, Arch. Néerl. Sci. Exactes nat. sér. 2: 29l. 1902.
Lectotypus (***hic designatus***, MBT 292406): [Icon] Oudemans & Koning, Arch. Néerl. Sci. Exactes, nat. sér. 2: tab. XXXI. 1902.
Epitypus (*vide* Lieckfeldt & al., Can. J. Bot. 76: 1520. 1998): THE NETHERLANDS (CBS 457.96).
Ex-epitype culture: CBS 457.96.
(=) *Hypocrea koningii* Lieckfeldt, Samuels & W. Gams, *in* Lieckfeldt & al., Can. J. Bot. 76: 1519. 1998.
Typus: [specimen] (BPI 745885).
Representative sequences: *tef*1: AY376054, DQ288991, KC285594, *rpb*2: FJ442761

Note: Because Lieckfeldt *et al.* (1998) did not locate a type specimen from Rifai for *T. koningii*, they designated a neotype (a dry culture, BPI 744887). However the illustration provided with the original description should have been designated as lectotype; thus BPI 744887 and its corresponding culture (CBS 457.96) are to be regarded as epitype and ex-epitype culture, respectively.

Trichoderma koningiopsis Samuels, C. Suarez & H.C. Evans, *in* Samuels & al., Stud. Mycol. 56: 117. 2006.
Typus: [dry culture] (BPI 802571B).
Ex-type culture: CBS 119075.
Representative sequences: *tef*1: AF4456910, DQ284966; *rpb2*: DQ381954
(=) *Hypocrea koningiopsis* Samuels in Samuels & al., Stud. Mycol. 56: 117. 2006.
Typus: [specimen] (BPI 802571).

Trichoderma kunigamense Yabuki & Okuda, *in* Yabuki & al., Mycoscience 55: 201. 2014.
Typus: [specimen] JAPAN (TNS-F-38436).
Ex-type culture: TAMA 0193= NBRC 109640.
Representative sequences: *tef*1: AB807645. *rpb*2: AB807657.

Trichoderma lacuwombatense (B.S. Lu, Druzhinina & Samuels) Jaklitsch & Voglmayr, Mycotaxon 126: 149. 2014 [“2013”].
(≡) *Hypocrea lacuwombatensis* B.S. Lu, Druzhinina & Samuels, Mycologia 96: 338. 2004.
Typus: [specimen] (PDD 77489) (isotypus BPI 746621) (ex-type culture CBS 122668 = G.J.S. 99-198)
Ex-type culture: CBS 122668.
Representative sequences: *tef*1: AY240863, AY937452; *rpb*2: KJ665286, KJ842157.

Trichoderma lanuginosum Samuels, *in* Samuels & Ismaiel, Mycol. Prog. 11: 240. 2011.
Typus: [specimen] BPI 863853.
Ex-type culture: CBS 125718.
Representative sequences: *tef*1: HQ342221, *rpb*2: HQ342284.

Trichoderma latizonatum (Peck) Samuels, **comb. nov.**
MycoBank MB812057
(≡) *Hypocrea latizonata* Peck in Ellis & Everhart, N. Amer. Pyrenom. p. 79. 1892.
Typus: [specimen] “A very curious species sent from Ohio under the above name [H. lati-zonata], by Prof. A.P. Morgan. Parasitic on Cyathus striatus, Hoff.” (NYS Specimen f 1661).
Note: Sundberg & Kost (1989) redescribed this remarkable, distinctive, host-specific *Trichoderma* from North America. This unmistakable species has not been cultured or sequenced.

Trichoderma leguminosarum Jaklitsch & Voglmayr, Stud. Mycol. 80: 68. 2015.
Typus: [specimen examined] (WU 33397).
Ex-type culture: CBS 30014.
Representative sequences: *tef*1: KJ665551, *rpb*2: KJ665288.

Trichoderma lentiforme (Rehm) P. Chaverri, Samuels & F.B. Rocha, *in* Chaverri & al., Mycologia 107: 577. 2015.
(≡) *Hypocrea lentiformis* Rehm, Hedwigia 37: 193 (1898).
Typus: [specimen] (BRAZIL: *Santa Catarina State*: on decaying leaves of *Euterpe*, Aug. 1888, *Ule*) (isotypus HBG #812).
Epitypus (*vide* Chaverri & al., 2015): [specimen] (BPI 744709).
Ex-epitype culture: G.J.S. 98-6 = CBS 100542.
Representative sequences: *tef*1: AF469195, AF443931; *rpb*2: FJ442687, FJ442749.

Trichoderma leucopus Jaklitsch, Fungal Divers. 48: 73. 2011.
Typus: [dry culture] WU 29231a.
Ex-type culture: CBS 122499.
(=) *Podostroma leucopus* P. Karst., Hedwigia 31: 294. 1892.
Typus: FINLAND, Etelä-Häme. Tammela, Syrjä, 30 Sep. 1892, *P.A. Karsten 3247* (H).
Representative sequences: *tef*1: FJ179571, FJ179570; *rpb*2: FJ179605, FJ179606.

Trichoderma lieckfeldtiae Samuels, *in* Samuels & Ismaiel, Mycologia 101: 149. 2009.
Typus: [dry culture] BPI 878745.
Ex-type culture: CBS 123049.
Representative sequences: *tef*1: EU856326, *rpb*2: EU883526.

Trichoderma lixii (Pat.) P. Chaverri, *in* Chaverri & al., Mycologia 107: 578. 2015
(≡) *Hypocrea lixii* Pat., Rev. Mycol. Toulouse 13: 138. 1891.
Typus: PAPUA NEW GUINEA: on hymenium of *Ganoderma pourii,* Jul. 1891, *Lix* (FH).
Epitypus (*vide* Chaverri & Samuels, *in* Mycol. Prog. 1: 285. 2002)*:* THAILAND: *Saraburi Province*: Khao Yai National Park, Wang Jumpee Trail, on hymenium of *Ganoderma* sp., 31 Jul. 1997, *K. Põldmaa, P. Chaverri, G.J. Samuels 8233* (BPI 745654).
Ex-epitype culture: G.J.S. 97-96 = CBS 110080 = ATCC MYA-2478).
Representative sequences: *tef*1: AF443938, FJ716622; *rpb*2: KJ665290.
Note: Chaverri & Samuels (2002) considered *H. lixii* to be the sexual morph of *T. harzianum*. A revision of the *T. harzianum* species complex (Chaverri *et al.,* 2015), however, shows that *T. lixii* and *T. harzianum* are closely related but distinct species.

Trichoderma longibrachiatum Rifai, Mycol. Pap. 116: 42. 1969.
Typus: [dry culture] USA: *Ohio*: Hamilton County, Duck Creek, on wood, 12 Sep. 1961, *W.B. Cooke 4576* (SHD-M).
Ex-type culture: CBS 816.68 = ATCC 18648.
Representative sequences: *tef*1: EU401591, *rpb*2: DQ087242.

Trichoderma longipile Bissett, Can. J. Bot. 69: 2395. 1992 ["1991"]; as '*longipilis*'.
Typus: [dry culture] (DAOM 177227-1*a*).
Ex-type culture: DAOM 177227-1*a*.
(=) *Hypocrea longipilosa* Jaklitsch, Stud. Mycol. 63: 62. 2009.
Typus: [specimen] (WU 29106).
Ex-type culture: CBS 120953.
(=)*Trichoderma cuneisporum* P. Chaverri & Samuels, Stud. Mycol. 48: 65. 2004 ["2003"]; *fide* Jaklitsch & Voglmayr (2015).
Typus: [dry culture] (BPI 843660).
(=) *Hypocrea cuneispora* P. Chaverri & Samuels, Mycologia 95: 1118. . 2004 ["2003"].
Typus: [specimen] (BPI 1112864).
Representative sequences: *tef*1: AF534622; *rpb*2: AF545550.

Trichoderma luteffusum Jaklitsch, Fungal Divers. 48: 92. 2011.
Typus: [dry culture] WU 29236a.
(=) *Hypocrea luteffusa* Jaklitsch, Fungal Divers. 48: 92. 2011.
Typus: [specimen] (WU 29236).
Ex-type culture: CBS 120537.
Representative sequences: *tef*1: FJ860645, FJ860643; *rpb*2: FJ860543, FJ860542.

Trichoderma luteocrystallinum Jaklitsch, Siepe & L.G. Krieglsteiner, *in* Jaklitsch, Fungal Divers. 48: 182. 2011.
Typus: [dry culture] WU 29237a.
(=) *Hypocrea luteocrystallina* Jaklitsch, Fungal Divers. 48: 182. 2011.
Typus: [specimen] (WU 29237).
Ex-type culture: CBS 123828.
Representative sequences: *tef*1: FJ860646, *rpb*2: FJ860544.

Trichoderma lycogaloides (Berk. & Broome) Jaklitsch, Lechat & Voglmayr, Mycologia 106: 135. 2014.
(≡) *Hypoxylon lycogaloides* Berk. & Broome, J. Linn. Soc., Bot. 14: 120 (1873) [1875].
Typus: [specimen] (K(M) 177253; G.H.K. Thwaites 1090).
Ex-type culture: CBS 123493.
Representative sequences: *tef*1: KF134800, *rpb*2: KF134792.

Trichoderma margaretense Jaklitsch, Fungal Divers. 48: 167. 2011.
Typus: [dry culture] WU 29201a.
(=) *Hypocrea margaretensis* Jaklitsch, Fungal Divers. 48: 167. 2011.
Typus: [specimen] (WU 29201).
Ex-type culture: CBS 120540.
Representative sequences: *tef*1: FJ860625, *rpb*2: FJ860529.

Trichoderma martiale Samuels, *in* Hanada & al., Mycol. Res. 112: 1342. 2008.
Typus: [dry culture] (BPI 878377).
Ex-type culture: CBS 123052.
Representative sequences: *tef*1: EU248618, *rpb*2: EU248597.

Trichoderma matsushimae (Abdullah & J. Webster) K. Yamaguchi, Tsurumi, Chuaseehar & Nakagiri, *in* Yamaguchi & al., Mycologia 104: 1115. 2012.

(≡) *Papulaspora viridis* Matsush., *Icon. Microfung. Matsush. lect.* (Kobe): 106. 1975.
(≡) *Pseudaegerita matsushimae* Abdullah & J. Webster, Trans. Br. Mycol. Soc. 80: 249. 1983.
Typus: UK: *Aberdeenshire*: Ballochbrae Forest, near Braemar, on Quercus leaf, Nov 1979, Abdullah (HME 3704; IMI 266915 authenticated specimen).
Ex-type culture: IMI 266015 = HME 3704.
Representative sequence: *tef*1: AB646539.
Note: Although the oldest epithet for this species is *Pap. viridis*. in *Trichoderma* the epithet '*viride'* is occupied. The next available epithet is '*matsushimae*,' which we have adopted here.

Trichoderma mediterraneum Jaklitsch & Voglmayr, Stud. Mycol. 80: 70. 2015.
Typus: [specimen examined] (WU 33334).
Ex-type culture: CBS 136459.
Representative sequences: *tef*1: KJ665568, *rpb*2: KJ665296.
Note: *Trichoderma mediterraneum,* very common in southern Europe (Jaklitsch & Voglmayr, 2015), may be a species complex comprising three or more phylogenetic species.

Trichoderma medusae Samuels, *in* Samuels & Ismaiel, Mycol. Prog. 11: 245. 2011.
Typus: [dry culture] (BPI 863841).
Ex-type culture: CBS 125719.
Representative sequences: *tef*1: HQ342214, *rpb*2: HQ342277.

Trichoderma megalocitrinum (Yoshim. Doi) Jaklitsch & Voglmayr, Mycotaxon 126: 149. 2013.
(≡) *Hypocrea megalocitrina* Yoshim. Doi, Bull. Natl. Sci. Mus. Tokyo 15: 669. 1972.
Typus: [specimen] (TNS.D-50 = TNS-F-223220. Isotype NY No. 00965630).
Ex-type culture: (Lost) B.E.O. 00-09.
Representative sequences: *tef*1: AY225855, *rpb*2: AF545563.
Note: The ex-type culture of *H. megalocitrina* has evidently been lost; sequences derived from it are deposited in GenBank.

Trichoderma melanomagnum P. Chaverri & Samuels, Stud. Mycol. 48: 77. 2004 ["2003"].
Typus: [dry culture] (BPI 843663).
(=) *Hypocrea melanomagna* P. Chaverri & Samuels, Stud. Mycol. 48: 77. 2004 ["2003"].
Typus: AUSTRALIA: *Victoria*: between Yarram and Turaralgia, Balook, Tarras Bulga National Park Visitor Center, forest trail, 550 m alt., on decorticated wood, 22 Aug. 1999, *G.J. Samuels 8575 & J. Pyke* (PDD). Isotypus (BPI 843648).
Ex-type culture CBS 114236.
Representative sequences: HQ342214, HQ342277; rpb2: AY391926.

Trichoderma microcitrinum (Yoshim. Doi) Jaklitsch & Voglmayr, Mycotaxon 126: 149. 2013.
(≡) *Hypocrea microcitrina* Yoshim. Doi, Bull. Nat. Sci. Mus. Tokyo 15: 667. 1972.
Typus: [specimen] (TNS.D-181 = TNS-F 223325).
Representative cultures: G.J.S. 91-61, G.J.S. 97-248.
Representative sequences: *tef*1: DQ835449, DQ835450, DQ835478, DQ835479; *rpb*2: DQ835460, DQ835462.
Note: This species was originally described from Japan. The cultures cited above were cited by Overton *et al.* (2006) and were collected in the U.S.A. For this reason we do not designate either as an epitype.

Trichoderma mienum C. S. Kim, Nakagiri & N. Maekawa, *in* Kim & al., Antonie van Leeuwenhoek 102: 638. 2012.
Typus: [specimen] (TMI 10313).
Ex-type culture: TUFC 61533 = CBS 132690.
Representative sequences: *tef*1: JQ621978, *rpb*2: JQ621968.

Trichoderma minutisporum Bissett, Can. J. Bot. 69: 2396. 1992 ["1991"].
Typus: [dry culture] (DAOM 167069p).
(=) *Hypocrea minutispora* B.S. Lu et al., *in* Lu & al., Mycologia 96: 335. 2004.
Typus: [specimen] (BPI 1109373).
Ex-type culture: DAOM 167069.
Representative sequences: *tef*1: KJ665612, *rpb*2: KJ665314.

Trichoderma moravicum Jaklitsch, Fungal Divers. 48: 208. 2011.
Typus: [dry culture} (WU29283a).
(=) *Hypocrea moravica* Petrak, Ann. Mycol. 38: 260. 1940.
Typus: CZECH REPUBLIC, Mährisch Weißkirchen, Podhorn, on wood, Oct. 1920, *F. Petrak* (K(M) 154039).
Epitypus (*vide* Jaklitsch, Fungal Divers. 48: 212. 2011): [specimen] (WU 29283).
Ex-epitype culture: CBS 120539.
Representative sequences: *tef*1: FJ860651; *rpb*2: FJ860548, FJ860549.

Trichoderma neocrassum Samuels, **nom. nov.** MycoBank MB812058
(≡) *Hypocrea crassa* P. Chaverri & Samuels, Stud. Mycol. 48: 61. 2004, *non T. crassum* Bissett, Can. J. Bot. 69: 2376. 1992.
Typus: [specimen] (BPI 843647).
Ex-type culture: CBS 114230.
Representative sequences: *tef*1: JN133572, *rpb*2: AY481587.
Note: Chaverri & Samuels (2003) reported that *T. crassum* Bissett and the newly described *H. crassa* were an asexual morph/teleomorph pair, but this link is not supported by an unpublished molecular phylogenetic analysis. *Hypocrea crassa* is distinct both from *T. crassum* and the closely related *T. virens* (J.H. Miller *et al.)* Arx.

Trichoderma neokoningii Samuels & Soberanis, *in* Samuels & al., Stud. Mycol. 56: 172. 2006.
Typus: [dry culture] (BPI 872182).
Ex-type culture: CBS 120070.
Representative sequences: *tef*1: KJ665620, *rpb*2: KJ665318.

Trichoderma neorufoides Jaklitsch, Fungal Divers. 48: 25. 2011.
Typus: [dry culture] WU 29296a.
(=) *Hypocrea neorufoides* Jaklitsch, Fungal Divers. 48: 25. 2011.

Typus: [specimen] (WU 2926a).
Ex-type culture: CBS 119506.
Representative sequence: *tef*1: FJ860553, *rpb*2: FJ860553.

Trichoderma neorufum (Samuels, Dodd & Lieckfeldt) Jaklitsch & Voglmayr, Mycotaxon 126: 150. 2013.
(≡) *Hypocrea neorufa* Samuels, Dodd & Lieckfeldt, *in* Dodd & al., Mycol. Prog. 1: 421. 2002.
Typus: [specimen] (BPI 744493).
Ex-type culture: CBS 111144.
Representative sequences: *tef*1: FJ860653, *rpb*2: FJ860550.

Trichoderma neosinense Samuels & Jaklitsch, *in* Jaklitsch & al., Persoonia 33: 139. 2013.
Typus: [specimen] (BPI 749315).
Ex-type culture: CBS 134884.
Representative sequences: *tef*1: KJ665624, *rpb*2: KC285777.

Trichoderma neotropicale P. Chaverri & F.B. Rocha, *in* Chaverri & al., 107: 580. 2015.
Typus: [metabolically inactive culture] (CBS 130633).
Ex-type culture: G.J.S. 11-185 = CBS 130633.
Representative sequences: *tef*1: FJ967803, FJ967825, HQ022771.

Trichoderma nothescens Samuels & Jaklitsch, *in* Jaklitsch & al., Persoonia 33: 143. 2013.
Typus: [specimen] (BPI 8456813).
Ex-type culture: CBS 134882.
Representative sequences: *tef*1: DQ307512, *rpb*2: EU241498.

Trichoderma novae-zelandiae (Samuels & O. Petrini) Jaklitsch & Voglmayr, Mycotaxon 126: 150. 2013.
(≡) *Hypocrea novae-zelandiae* Samuels & O. Petrini, *in* Samuels & al., Stud. Mycol. 41: 25. 1998.
Typus: [specimen] (PDD 46792).
Ex-type culture: CBS 496.97 = CBS 639.92 = G.J.S 81-265.
Representative sequences: *tef*1: AY865639, AY937448; *rpb*2: JN133563.

Trichoderma nybergianum (T. Ulvinen & H. Chamberlain) Jaklitsch & Voglmayr, Mycotaxon 126: 150. 2014.
(≡) *Podostroma nybergianum* T. Ulvinen, Suur-sieniopas.: 291. 1976.
(≡) *Hypocrea nybergiana* T. Ulvinen & H. Chamberlain, *in* Chamberlain & al., Karstenia 44: 21. 2004.
Typus: [specimen] (OULU F 49597).
Ex-type culture: None.
Representative cultures: CBS 122500, 122496
Representative sequences: *tef*1: FJ179575, *rpb*2: FJ179611.

Trichoderma oblongisporum Bissett, Can. J. Bot. 69: 2398. 1992 [‘1991’].
Typus: [dry culture] (DAOM 176226).
Ex-type culture: DAOM 176226.
Representative sequences: *tef*1: AY750884, AF534623; *rpb*2: AF545551.

Trichoderma ochroleucum (Berk. & Ravenel) Jaklitsch & Voglmayr, Mycotaxon 126: 150. 2014.
(≡) *Hypocrea ochroleuca* Berk. & Ravenel in Berkeley, Grevillea 4: 14. 1875.
Typus: USA: *South Carolina:* “*Hypocrea ochroleuca* Berk. & Rav. 1382, on trunks of *Myrica cerifera*, S[outh] C[arolina], HWR near *S. luteovirens”* (K, ISOTYPE NY 00965640).
Ex-type culture: None. Representative culture: CBS 119502.
Representative sequences: *tef*1: FJ860659, *rpb*2: FJ860556.
Note: A second specimen in NY (00965641) identified as *H. ochroleuca* from the herbarium of J.S. Billings is annotated as being ‘ex herb. Rav.’ and is probably an isotype but the specimen lacks collecting information. Jaklitsch (2011) described an asexual morph for *H. ochroleuca* based on a British collection. Because he did not have a culture of a collection made in North America he did not epitypify the species with the British material.

Trichoderma olivascens Jaklitsch, Samuels & Voglmayr, Persoonia 33: 121. 2013.
Typus: [specimen] (WU 31622).
Ex-type culture: CBS 132574.
Representative sequences: *tef*1: KC285624, *rpb*2: KC285752.

Trichoderma oligosporum Z.X. Zhu & W.Y. Zhuang, Mycologia 107: 335. 2015.
Typus: [specimen] CHINA: *Anhui*: Jinzhai, Tiantangzhai, 900–1100 m, on twig, 24 Aug 2011, *S.L. Chen*, *W.Y. Zhuang*, *H.D. Zheng* & *Z.Q. Zeng* 7890 (HMAS 252870).
Ex-type culture HMAS 245079 = CGMCC 3.17527.
Representative sequences: *tef*1: KJ634764, *rpb*2: KJ634731.

Trichoderma orientale (Samuels & O. Petrini) Samuels & Jaklitsch, *in* Jaklitsch & Voglmayr, Mycotaxon 126: 151. 2014.
(≡) *Hypocrea orientalis* Samuels & O. Petrini, *in* Samuels & al., Stud. Mycol. 41: 30. 1998.
Typus: [specimen] (BPI 1109853).
Ex-type culture: CBS 130428.
Representative sequences: *tef*1: EU401581, JN175573, JQ685868; *rpb*2: JN175522, JQ685884.

Trichoderma ovalisporum Samuels & Schroers, *in* Holmes & al., Mycol. Prog. 3: 204. 2004.
Typus: [dry culture] (BPI 843692).
Ex-type culture: CBS 133299.
Representative sequences: *tef*1: AY376037, *rpb*2: FJ442742.

Trichoderma pachypallidum Jaklitsch, Fungal Divers. 48: 107. 2011.
Typus: [dry culture] WU 29327a.
(=) *Hypocrea pachypallida* Jaklitsch, Fungal Divers. 48: 107. 2011.
Typus: [specimen] (WU 29327a).
Ex-type culture: CBS 122126.
Representative sequences: *tef*1: FJ860662, *rpb*2: JQ685879.

Trichoderma parapiluliferum (B.S. Lu, Druzhinina & Samuels) Jaklitsch & Voglmayr, Mycotaxon 126: 151. 2013.
(≡) *Hypocrea parapilulifera* B.S. Lu, Druzhinina & Samuels, *in* Lu & al., Mycologia 96: 331. 2004.
Typus: [specimen] (BPI 112832).
Ex-type culture: CBS 112771.
Representative sequences: *tef*1: FJ179578, AY937444; *rpb*2: FJ179614.

Trichoderma parareesei Atanasova, Jaklitsch, Komoń-Zelazowska., C.P. Kubicek & Druzhinina, Appl. Environ. Microbiol. 76: 7259. 2010.
Typus: [dry culture] (WU 30015).
Ex-type culture: CBS 125925.
Other cultures: CBS 130513, CBS 130853
Representative sequences: *tef*1: GQ354353, *rpb*2: HM182963.

Trichoderma pararogersonii Jaklitsch & Voglmayr, Stud. Mycol. 80: 73. 2015.
Typus: [metabolically inactive culture] (CBS 133496).
Ex-type culture: CBS 133496.
Representative sequences: *tef*1: KJ665625, *rpb*2: KJ665320.

Trichoderma paratroviride Jaklitsch & Voglmayr, Stud. Mycol. 80: 75. 2015.
Typus: [metabolically inactive culture] (CBS 136489).
Ex-type culture: CBS 136489.
Representative sequences: *tef*1: KJ665627, *rpb*2: KJ7665321.

Trichoderma paraviridescens Jaklitsch, Samuels & Voglmayr, Persoonia 31: 128. 2013.
(≡) *Hypocrea viridescens* Jaklitsch & Samuels, *in* Jaklitsch & al., Stud. Mycol. 56: 156. 2006, non *Eidamia viridescens* A.S. Horne & H.S. Williamson, Ann. Bot. 37: 396. 1923 [(≡) *T. viridescens* (A.S. Horne & H.S. Williamson) Jaklitsch & Samuels, *in* Jaklitsch & al., Stud. Mycol. 56: 156. 2006].
Typus: [specimen] **(**WU 24029).
Ex-type culture: CBS 119321.
Representative sequences: *tef*1: DQ672610, *rpb*2: KC285763.
Note: Jaklitsch *et al.* (2006) incorrectly regarded the new sexual morph *H. viridescens* as identical with *Eidamia* viridescens.

Trichoderma parepimyces Jaklitsch, Stud. Mycol. 63: 66. 2009.
Typus: [dry culture] WU 29107a.
(=) *Hypocrea parepimyces* Jaklitsch, Stud. Mycol. 63: 66. 2009.
Typus: [specimen] (WU 29107a).
Ex-type culture: CBS 122769.
Representative sequences: *tef*1: FJ860664, *rpb*2: FJ860562.

Trichoderma parestonicum Jaklitsch, Stud. Mycol. 63: 69. 2009.
Typus: [dry culture] WU 29110a.
(=) *Hypocrea parestonica* Jaklitsch, Stud. Mycol. 63: 69. 2009.
Typus: [specimen] (WU 29110a).
Ex-type culture: CBS 120636.
Representative sequences: *tef*1: FJ860666, *rpb*2: FJ860565.

Trichoderma parmastoi (Overton) Jaklitsch & Voglmayr, Mycotaxon 126: 151. 2014.
(≡) *Hypocrea parmastoi* Overton, *in* Overton & al., Stud. Mycol. 56: 62. 2006.
Typus: [specimen] (BPI 843639).
Ex-type culture: TFC 97-143.
Representative culture: CBS 121139.
Representative sequences: *tef1*: FJ860668, DQ834456 (exon); *rpb*2: FJ860567, DQ834463.

Trichoderma patella (Cooke & Peck) Jaklitsch & Voglmayr, Mycotaxon 126: 151. 2014.
(≡) *Hypocrea patella* Cooke & Peck, *in* Peck, Ann. Rep. New York State Mus. Nat. Hist. 29: 57. 1878 ["1876"].
Lectotypus (*vide* Doi in Bull. Natl. Sci. Mus. Tokyo B, 1: 14. 1975): USA, "On rotten wood, Buffalo, N.Y., *G.W. Clinton*, comm. C.H. Peck (K, *fide* Doi 1975). Isolectotypi: NYS f2282; BPI 631626; NY, Specimens 0965644 and 0965645.
Epitypus (***hic designatus***, MBT 201075): [specimen] USA: *Maryland:* Prince George County, E of Largo in Old Growth Forest at Church Rd, on decorticated wood, 11 Oct 1991, *GJ Samuels, SE Rehner, AY Rossman, FA Uecker* (BPI 1112910).
Ex-epitype culture: CBS 110081.
Representative sequences: *tef*1: AY937427, *rpb*2: KJ665323.
Note: Dodd *et al.* (2002) identified several collections and cultures as *H. patella*. From among them we select here a collection from Maryland as epitype. Dodd *et al.* (2002) recognized two forms of *H. patella,* including f. *patella* and f. *tropica* Yoshim. Doi. In the present work we elevate f. *tropica* to species rank as *T. patellotropicum.*

Trichoderma patellotropicum Samuels, **stat. nom. nov.**
MycoBank MB812059
(≡) *Hypocrea patella* f. *tropica* Yoshim. Doi, Bull. Natn. Sci. Mus. Tokyo B, Botany 1: 14. 1975.
Typus: [specimen] (D.1521 = TNS-F-224610).
Epitypus (***hic designatus***, MBT 20164): COSTA RICA, Pta. Arenas, Parque Internacional La Amistad, Las Alturas Biological Station, trail to Cerro Echandi, elev. 1580 m, log, leg. *S.M. Huhndorf & F. Fernandez 2232* (BPI 744562).
Ex-type culture. None.
Representative culture G.J.S. 96-198 = ATCC 208855 = MYA 2685 = CBS 110084.
Representative sequences: *tef*1 = AY937428, ITS = AF487661.

Trichoderma paucisporum Samuels, C. Suárez & K. Solis, *in* Samuels & al., Mycol. Res. 110: 390. 2006.
Typus: [dry culture] (BPI 870953).
Ex-type culture: CBS 118645.
Representative sequences: *tef*1: DQ109540, *rpb*2: FJ150787.

Trichoderma peltatum (Berk.) Samuels, Jaklitsch & Voglmayr, *in* Jaklitsch & Voglmayr, Mycotaxon 126: 151. 2014.

(≡) *Sphaeria peltata* Jungh Verh. Batav. Genootsch. Kunst. Wet. 17(3): 20. 1838; *nom. illegit., non* DC. & Lam., *in* Lamarck & de Candolle, Fl. franç., 3rd edn 2: 287. 1805.

(≡) *Hypocrea peltata* Berk., Hooker's J. Bot. Kew Gard. Misc. 3: 206. 1851.

Typus: [specimen] (L00532089, Herb. L 910.250.1421).

Ex-type culture: None.

Representative cultures: CBS 127107 = G.J.S. 09-1550, CBS 127115 = G.J.S. 08-207, G.J.S. 10-103, G.J.S. 10-104, G.J.S. 10-105, CBS 120951.

Representative sequences: *tef*1: EF392731, KR135819, KR135820, KR135822, KR135823, *rpb*2: HQ260609, HQ260610, EF392733.

Note: Several species have been listed as synonyms of *H. peltata* (Samuels & Ismaiel 2011), but their types were collected over a wide, mainly Southern Hemisphere, geographic range. The type of *Sphaeria peltata* was collected in Indonesia. We do not have cultures from Indonesia, but sequences of Japanese collections are highly similar to those obtained from collections made in the USA, indicating the likelihood of a single species with a wide distribution. Druzhinina *et al.* (2007) reported the isolation of *'Hypocrea* sp. MKZ-2007a'' (*tef*1: EF392731, *rpb*2: EF392733) from human lung tissue; that fungus was *T. peltatum*.

Trichoderma petersenii Samuels, Dodd & Schroers, *in* Samuels & al., Stud. Mycol. 56: 122. 2006.

Typus: [dry culture] (BPI 864092B).

(=) *Hypocrea petersenii* Samuels, Dodd & Schroers, *in* Samuels & al., Stud. Mycol. 56: 122. 2006.

Typus: [specimen] (BPI 864029A).

Ex-type culture: CBS 119051.

Other cultures: DAOM 165782, CBS 119507, CBS 124375, CBS 124739

Representative sequences: *tef*1: DQ284979, DQ289004, DQ289000, *rpb*2: FJ442783, FJ860568.

Note: Originally described from the USA (Tennessee), *T. petersenii* appears to be a cosmpolitan and common species.

***Trichoderma pezizoides** (Berk. & Broome) Jaklitsch & Voglmayr, Mycotaxon 126: 152. 2014.

(≡) *Hypocrea pezizoides* Berk. & Broome, J. Linn. Soc., Bot. 14: 112. 1875; nom. cons. prop. Non *Trichoderma pezizoideum* Wallr., Fl. Germ. 2: 246. Feb–Mar 1833; nom. rej. prop.

Lectotypus (***hic designatus***, MBT 202324): [specimen] "*Hypocrea pezizoides No. 308,* Cent Province, Dec 1868, sent before but these specimens in better fruit" (K, Herb. Berk 1879).

Isotypi**:** [specimens] [SRI LANKA:] "*Hypocrea pezizoides,* B. & Br., *308*¸ Cent. Prov. (K, Hb. Berk 1879)."Hypocrea pezizoides, substrate undetermined, coll. *Thwaites 308* (C.G. Lloyd mycological collection, Smithsonian Institution 6055; BPI 715639).

Ex-type culture: None.

Representative cultures: G.J.S. 01-231 (lost), CBS 101131 = C.P.K. 775 = G.J.S. 97-83.

Representative sequences: *tef*1: AY225859, *rpb*2: JN715610, AF545564.

Note: There are two collections of *H. pezizoidea* in Berkeley's herbarium; they appear to be parts of the same gathering. The portion in the Lloyd herbarium comprises a single stroma, which is identical to the other parts of this number in Berkeley's herbarium. Samuels (2014) proposed conservation of *H. pezizoides* over the older *T. pezizoideum* Wallr. Sequences of the representative cultures place this species in the Viride clade of *Trichoderma.* Sequences deposited in GenBank are diverse and may represent more than one species. The sequenced culture of one of the cited representative cultures cited here was derived from ascospores (specimen THAILAND, BPI 841389) germinating in asci, giving us a high degree of confidence of its identity. However that culture has been lost.

Trichoderma phellinicola Jaklitsch, Fungal Divers. 48: 143. 2011.

Typus: [dry culture] WU 29402a

(=) *Hypocrea phellinicola* Jaklitsch, Fungal Divers. 48: 143. 2011.

Typus: [specimen] (WU 29402a).

Ex-type culture: CBS 119283.

Representative sequences: *tef*1: FJ860672BS, *rpb*2: FJ860569.

Trichoderma phyllostachydis P. Chaverri & Samuels, Stud. Mycol. 48: 80. 2004 ["2003"].

Typus: [dry culture] (BPI 843665).

(=) *Hypocrea phyllostachydis* P. Chaverri & Candoussou, *in* Chaverri & al., Mycol. Prog. 3: 33. Feb 2004.

Typus: [specimen] (BPI 802617).

Ex-type culture: G.J.S. 92-81 = CBS 114637 = DAOM 232100 = ATCC MYA -3067.

Other culture: G.J.S. 92-123 = CBS 114071 = DAOM 232101 = ATCC MYA 3066.

Representative sequences: *tef*1: AY737745, AY391986; *rpb*2: AF545513, AY391927.

Trichoderma piluliferum J. Webster & Rifai, *in* Rifai, Mycol. Pap. 116: 16. 1969.

Typus: UK: *Yorkshire:* "Habitat in ligno putrido *Betulae*, Dunsop Bridge, prope Clithroe, Yorkshire, Anglia, 23 Septembri 1962*, J. Webster*" (SHD-M 2638).

Ex-type culture: CBS 120927.

(=) *Hypocrea pilulifera* J. Webster & Rifai, Trans. Brit. Mycol. Soc. 51: 511. 1968.

Typus: UK: *Derbyshire*: Glossop, Chunal Moore, on dead culms of *Juncus effusus*, 11 Jul. 1965, *J. Webster* (K(M) 64379).

Ex-type culture: CBS 814.68.

Representative sequences: *tef*1: AY737747, FJ860674; *rpb*2: AF545519, FJ179615.

Note: For comments see Lu *et al.* (2004).

Trichoderma pinnatum Samuels, *in* Samuels & al., Fungal Divers. 55: 99. 2012.

Typus: [dry culture] (BPI 882296).

Ex-type culture: CBS 131292.

Representative sequences: *tef*1: JN175571, *rpb*2: JN175515.

Trichoderma placentula Jaklitsch, Fungal Divers. 48: 120. 2011.
Typus: [dry culture] (WU 29410a).
(=) *Hypocrea placentula* Grove, J. Bot. (Lond.) 23: 133. 1885.
Typus: UK: *Warwickshire*: Olton Reservoir, base of *Juncus* stems, 13 Sep. 1884, W.B. Grove (K(M)154041).
Epitypus (*vide* Jaklitsch, Fungal Divers. 48: 123. 2011): UK: *Derbyshire*: Baslow, Longshaw Country Park, Peak District National Park, 53°18′26″ N, 01°36′08″ W, elev. 350 m, on dead culms of *Juncus effusus* 2–5 mm thick, also on a leaf of Acer sp., soc. imperfect microfungi, 10 Sep. 2004, *H. Voglmayr & W. Jaklitsch, W.J. 2694* (WU 29410).
Ex-epitype culture: 120924.
Representative sequences: *tef*1: FJ179580, *rpb*2: FJ179616.

Trichoderma pleuroti S.H. Yu & M.S. Park, *in* Park & al., Mycobiology 34: 111. 2006; [as '*pleurotum*'].
Typus: [dry culture] KOREA: *Gangwon Province:* "dried culture specimen on PDA, isolated from the waste cotton substrate of oyster mushroom, Chuncheon, April 1998, *S.H. Yu*" (CNUMH 501 Mycological Herbarium, Chungnam National University, Korea).
Ex-type culture: CBS 124387.
Representative sequences: *tef*1: HM142382, EU279975; *rpb*2: HM142372.

Trichoderma pleuroticola S.H. Yu & M.S. Park, *in* Park & al., Mycobiology 34: 112. 2006.
Typus: [dry culture] KOREA: *Gyonggi Province*: 'dried culture specimen on PDA, isolated from the waste cotton substrate of oyster mushroom, Paju, May 1999, *S.H. Yu*" (CNUMH 601 Mycological Herbarium, Chungnam National University, Korea).
Ex-type culture: CNUMH 601 = CBS 124383.
Representative sequences: *tef*1: HM142381, EU918160; *rpb*2: HM142371.

Trichoderma polysporum (Link) Rifai, Mycol. Pap. 116: 18. 1969.
(≡) *Sporotrichum polysporum* Link, Mag. Ges. Naturf. Fr. Berlin 8: 34. 1816 : Fries, Syst. Mycol. 3(2): 434. 1832.
Typus: "*Sporotrichum polysporum* [scr. Link], Nees ab Esenbeck, alt e Sille [Nu?], Hb. Link" (B, *fide* S.J. Hughes *in litt.,* comm. K.A. Seifert, 27 June 2014).
Epitypus (***hic designatus***, MBT 201079): [metabolically inactive culture] GERMANY: Kiel-Kitzeburg, soil from wheat field, 1963, *W. Gams* C306 (CBS 820.68).
(=) *Aleurisma sporulosum* Link, Mag. Ges. Naturf. Fr. Berlin 3: 19. 1809.
(≡) *Trichoderma sporulosum* (Link) S. Hughes, Can. J. Bot. 36: 820. 1958.
Typus: "*Al*[*eurisma*] *sporulosum*, caespitibus indeterminatis crassis densis albis. Caespites ad 2-4 lilneas latos, ad. lin. fere crassos format in ramis dejectis. Nudo oculo massam farinosam continere videtur. Et e Lusitania habemus. Iconem V. fig. 25." (L, *vide* Hughes in Can. J. Bot. 36: 820. 1958).
(=) *Hypocrea pachybasioides* Yoshim. Doi, Bull. Natn. Sci. Mus. Tokyo 15: 685. 1972.
Typus: JAPAN: Otsuno, Kochi City, on bark, 3 May 1966, Y. Doi TNS.D-77 (TNS-F-190528).
(=) *Trichoderma croceum* Bissett, Can. J. Bot. 69: 2379. 1991 [20 Jan 1992].
Typus: [dry culture] (DAOM 167068).
(=) *Trichoderma stellatum* (B.S. Lu, Druzhinina & Samuels) Jaklitsch & Voglmayr, Mycotaxon 126: 153. 2014.
(≡) *Hypocrea stellata* B.S. Lu, Druzhinina & Samuels, *in* Lu & al., Mycologia 96: 333. 2004.
Typus: [specimen] (PDD 77488, isotypus: BPI 746610).
Ex-epitype culture: CBS 820.68.
Representative sequences: *tef*1: AY750866, FJ860661; *rpb*2: Fj179613, JQ685878.
Note: S.J. Hughes (1958: 812) studied the specimens of both *S. polysporum* and *Aleurisma sporulosum* (L), placing both species in synonymy with *T. sporulosum* (ibid.: 820). He wrote the following about the type collection of *S. polysporum* (S.J. Hughes, hand-written notes deposited in DAOM): "[dots white or cream coloured now squashed on rotten bark]. [looks like *Trichoderma candidum* (Sacc.) but no curly hyphae seen] [*Trichoderma* (white) no spirals.]" Because it was sanctioned by Fries, the name *polysporum* was subsequently given preference over *sporulosum.* Rifai (Mycol. Pap. 116: 21. 1969) considered *Gams C306* to be typical of *T. polysporum*. Accordingly, we designate this metabolically inactive culture as epitype of *Sporotrichum polysporum* here. Bissett (1991) distinguished between *T. polysporum* and *H. pachybasioides* on the basis of morphology. However, phylogenetic analyses (Lu *et al.,* 2004; Jaklitsch, 2011) have demonstrated that cultures isolated directly from substrate and identifiable as *T. polysporum* cluster with cultures isolated from ascospores of specimens identifiable as *H. pachybasioides,* including cultures studied by Bissett. Moreover, *T. polysporum* appears to represent a species complex that includes *T. croceum* and *T. stellatum*, which we include here as synonyms of *T. polysporum* (Lu *et al.,* 2004; Jaklitsch & Voglmayr, 2015; Bissett unpubl.). Future study focused on this complex may resolve additional species, including some that today we consider as synonyms.

Trichoderma poronioideum (A. Möller) Samuels, **comb. nov.**
MycoBank MB812060
(≡) *Hypocrea poronioidea* A. Möller, Phycom. Ascom.:. 295. 1901.
(≡) *Podocrea poronioidea* (A. Möller) Sacc. & D. Sacc., Syll. Fung. 17: 799. 1905.
Typus: BRAZIL: Sta. Catharina pr. Blumenau, in ligno putrido, leg. A. Möller (FH-GEN; annotated as "authentic").
Epitypus (***hic designatus,*** MBT 201065): [specimen] Cameroon, S of Yaounde, vic. Mbelmaje, Mbalmayo Forest Reserve, in secondary forest with heavy understory, 03°25.269' N, 11°29.269' E, alt. 657 m, on decorticated wood, 30 Jun 2001, *G.J. Samuels* (G.J.S. 8946) (BPI 882740; culture G.J.S. 01-203 = CBS 139046. *tef*1 = KP109823, ITS = KP109821).
Ex-epitype culture: CBS 139046.
Representative sequence: *tef*1 = KP109823.
Note: Samuels & Lodge (1996) described the sexual and unnamed asexual morphs of this distinctive species. DNA

sequences indicate that *T. poronioideum* is a member of the Viride clade, closely related to *T. asperellum.*

Trichoderma priscilae Jaklitsch & Voglmayr, Stud. Mycol. 80: 77. 2014.
Typus: [specimen] (WU 33327).
Ex-type culture: CBS 131487.
Representative sequences: *tef*1: KJ665691, *rpb*2: KJ665333.

Trichoderma protopulvinatum (Yoshim. Doi) Jaklitsch & Voglmayr, Mycotaxon 126: 152. 2013.
(≡) *Hypocrea protopulvinata* Yoshim. Doi, Bull. Natl. Sci. Mus. Tokyo 15: 695. 1972.
Typus: [specimen] (TNS-D-365 = TNS-F-223431, isotypus NY No. 0965650).
Ex-type culture: CBS 739.83.
Representative sequences: tef1: FJ860676, rpb2: FJ860574.

Trichoderma protrudens Samuels & P. Chaverri, *in* Degenkolb & al., Mycol. Prog. 7: 212. 2008.
Typus: [dry culture] BPI (878378).
Ex-type culture: CBS 121320.
Representative sequences: *tef*1: FJ860677, *rpb*2: FJ860574.

Trichoderma pseudocandidum P. Chaverri, Samuels & Minnis, *in* Minnis & al., Mycotaxon 109: 246. 2009.
(≡) *Trichoderma candidum* P. Chaverri & Samuels, Stud. Mycol. 48: 402004 ["2003"], non *T. candidum* Alb. & Schwein., Consp. Fung. Lusat. Sup.: 137. 1805.
Typus: [dry culture] (BPI 843652).
(=) *Hypocrea candida* P. Chaverri & Samuels, Stud. Mycol. 48: 40. 2004 ["2003"].
Typus: [specimen] (INB 0003719978).
Ex-type culture: CBS 114249.
Representative sequences: *tef*1: AY737742, AY391962; *rpb*2: AY391891.

Trichoderma pseudogelatinosum (M. Komatsu & Yoshim. Doi) C.S. Kim, *in* Kim & al., Pl. Pathol. J. 28: 347. 2012.
(≡) *Hypocrea pseudogelatinosa* M. Komatsu & Yoshim. Doi, Rep. Tottori Mycol. Inst. 10: 425. 1973.
Typus: [specimen] TNS-F-192712.
Ex-type culture: CNUN309.
Representative sequences: *tef*1: HM920202, *rpb*2: HM920173.

Trichoderma pseudokoningii Rifai, Mycol. Pap. 116: 45. 1969.
(=) *Hypocrea pseudokoningii* Samuels & O. Petrini, *in* Samuels & al., Stud. Mycol. 41: 36. 1998.
Typus: "Habitat ad ligna, AUSTRALIA australi, Mayo 1963, *P.H.B. Talbot* (*P.H.B. Talbot H-1*)" (SHD M 5116).
Ex-type culture: CBS 408.91 = DAOM 167678 = ATCC 298861.
Representative sequences: *tef*1: JN175588, *rpb*2: JN175535.
Note: When they proposed the new species *H. pseudokoningii*, Samuels *et al.* (1998) said that the holotypes of both morphs were the same specimen. Therefore *T. pseudokoningii* and *H. pseudokoningii* are obligate synonyms.

Trichoderma pseudolacteum C.S. Kim & N. Maekawa, *in* Kim & al., Mycol. Prog. 12: 746. 2012.
Typus: [specimen] (TMI 8484) (ex-type culture TUFC 61490 = CBS 133191).
Ex-type culture: TUFC 61490 = CBS 133191.
Representative sequences: *tef*1: JX175588, *rpb*2: JX175535.

Trichoderma pseudonigrovirens P. Chaverri, Samuels & Minnis, *in* Minnis & al., Mycotaxon 109: 246. 2009.
(≡) *Trichoderma nigrovirens* P. Chaverri & Samuels, Stud. Mycol. 48: 78. 2004 ["2004"]; nom. Illegit. (Art. 53.1); *non* Goddard, Bot. Gaz. 56: 273, 1913; as "*nigro-virens*".
Typus: [dry culture] BPI 843664.
Ex-type culture: CBS 1143340.
(=) *Hypocrea nigrovirens* P. Chaverri & Samuels, *in* Chaverri & al., Mycologia 93: 759. 2001.
Typus: [specimen] (BPI 842416).
Representative sequences: *tef*1: AY377744, AF534582; *rpb*2: AF545518.

Trichoderma pseudostramineum (Yoshim. Doi) C.S. Kim, *in* Kim & al., Pl. Path. J. 28: 350. 2012.
(≡) *Hypocrea pseudostraminea* Yoshim. Doi, Bull. Natl. Sci. Mus. Tokyo 15: 676. 1972.
Typus: [specimen] TNS-D-366 = TNS-F-223432.
Ex-type culture: TUFC 60104.
Representative cultures: CNU N109, CNU N334, TUFC 60440, TUFC 60753.
Representative sequences: *tef*1: HM920206, JQ797400, JQ797401; *rpb*2: HM920177, JQ797408, JQ797409.

Trichoderma psychrophilum Jaklitsch, Fungal Divers. 48: 195. 2011.
Typus: [dry culture] (WU 29420a).
Ex-type culture: CBS 119129.
(=) *Hypocrea psychrophila* E. Müller, B. Aebi & J. Webster, Trans. Br. Mycol. Soc. 58: 1. 1972.
Typus: SWITZERLAND: *Kanton Wallis*: Brig, Aletschreservat, alter Belalpweg, on wood of *Rhododendron ferrugineum*, 12 Sep. 1968, *E. Müller & B. Aebi* (K(M) 155404).
Representative cultures: CBS 262.71, CBS 343.71.
Representative sequences: t*ef*1: AY737752, JN133574, FJ860780, FJ860681; *rpb*2: AF545520, JN133564, FJ860575.
Note: Stromata of this species are produced readily in artificial culture.

Trichoderma pubescens Bissett, Can. J. Bot. 69: 2045. 1992 ["1991"].
Typus: [dry culture] (DAOM 166162).
Ex-type culture: DAOM 166162.
Representative sequences: *tef*1: AY750887, AF534624; *rpb*2: EU248613.

Trichoderma pulvinatum (Fuckel) Jaklitsch & Voglmayr, Mycotaxon 126: 152. 2013.
(≡) *Hypocrea pulvinata* Fuckel, Jahrb. Nassau. Ver. Naturk. 23-24: 185. 1870 ["1869"].
Lectotypus (*vide* Overton & al. Stud. Mycol. 56: 17. 2006):

"GERMANY, Geis, Haenheimer Wald, on *Polyporus sulphureus*, *L. Fuckel*, autumn, No. 876" (FH).
Representative cultures: CBS 119954, CBS 119611, CBS 121729.
Representative sequences: *tef*1: FJ860683; *rpb*2: AF 545559, FH860577.

Trichoderma pyramidale W. Jaklitsch & P. Chaverri, *in* Chaverri & al., 107: 580. 2015.
Typus: [metabolically inactive culture] (CBS 135574).
Ex-type culture: CBS 135574.
Representative sequences: *tef*1: KJ665699, KJ665696, KJ665697; *rpb*2: KJ665334.

Trichoderma reesei E.G. Simmons, *in* Bigelow & Simmons (Eds), Abstr. Second International Mycological Congress 2: 618. 1977, nom. cons. prop.
Lectotypus (*vide* Samuels, Taxon 63: 938. 2014): [dry culture] PAPUA NEW GUINEA: *Solomon Islands*, Bougainville Island, on cotton duck (fabric) shelter, QM 6a (NY No. 01048452; isolectotypus NRRL 3652).
Ex-type culture: QM 6a = CBS 383.79.
(=) *Hypocrea jecorina* Berk. & Broome, J. Linn. Soc. Bot. 14: 112. 1873.
Representative sequences: *tef*1: AF401004, *rpb*2: HM182969.
Note: Samuels (2014) proposed the conservation of the well-known younger name, *T. reesei,* over *H. jecorina*.

Trichoderma rhododendri (Jaklitsch & Voglmayr) Jaklitsch & Voglmayr, Mycotaxon 126: 152. 2014.
(≡) *Hypocrea rhododendri* Jaklitsch & Voglmayr, *in* Jaklitsch, Fungal Divers. 48: 199. 2011.
Typus: [specimen] (WU 29442).
Ex-type culture: CBS 119288.
Representative sequences: *tef*1: FJ860685, *rpb*2: FJ860578.

Trichoderma rifaii F.B. Rocha, P. Chaverri & Samuels, *in* Chaverri & al., 107: 586. 2015.
Typus: [metabolically inactive culture] (CBS 130746).
Ex-type culture: DIS 355b = CBS 130746.
Representative sequences: *tef*1: KJ665697, *rpb*2: FJ442720.

Trichoderma rodmanii (Samuels & P Chaverri) Jaklitsch & Voglmayr, Mycotaxon 126: 152. 2014.
(≡) *Hypocrea rodmanii* Samuels & P. Chaverri, *in* Degenkolb & al., Mycol. Prog. 7: 213. 2008.
Typus: [specimen] (BPI 1112859).
Ex-type culture: CBS 120895.
Representative sequences: *tef*1: FJ860687, EU338286; *rpb2*: FJ860580, EU338324.

Trichoderma rogersonii Samuels, *in* Samuels & al., Stud. Mycol. 56: 125. 2006.
Typus: [dry culture] (BPI 870964).
(=) *Hypocrea rogersonii* Samuels, Stud. Mycol. 56: 125. 2006.
Typus: [specimen] (BPI 8709964A).
Ex-type culture: G.J.S. 04-158 = CBS 119233.
Representative sequences: *tef*1: DQ307563, J860690; *rpb*2: JN133566, FJ860583.

Trichoderma rossicum Bissett, C.P. Kubicek & Szakács, *in* Bissett & al., Can. J. Bot. 81: 578. 2003.
Typus: [dry culture] (DAOM 230011).
Ex-type culture: DAOM 230011,
Representative sequences: *tef*1: AY937441, *rpb*2: HC342288.

Trichoderma rosulatum Z.X. Zhu & W.Y. Zhuang, Persoonia 34: 117. 2015.
Typus: CHINA: *Anhui*: Jinzhai, Tiantangzhai, alt. 900–1000 m, on rotten bark, 22 Aug. 2011, *S.L. Chen, W.Y. Zhuang, H.D. Zheng & Z.Q. Zeng 7752* (HMAS 252548).
Ex-type culture: HMAS 244906.
Representative sequences*: tef1:* KF729984*, rpb2:* KF730005.

Trichoderma rubi Jaklitsch & Voglmayr, Stud. Mycol. 80: 80. 2015.
Typus: [specimen] (WU 33316).
Ex-type culture: CBS 127380.
Representative sequences: *tef*1: KJ665704, *rpb*2: KJ665336.

Trichoderma rufobrunneum Z.X. Zhu & W.Y. Zhuang, Persoonia 34: 122. 2015.
Typus: CHINA: *Jilin*: Jiaohe, Qianjin Forestry Farm, alt. 450 m, on rotten wood, 24 July 2012, *W.Y. Zhuang*, *Z.X. Zhu*, *Z.Q. Zeng*, *H.D. Zheng* & *F. Ren* 8155 (HMAS 252547).
Ex-type culture: HMAS 244907.
Representative sequences: *tef*1: KF729984, KF729989; *rpb*2: KF730010, KF730007.

Trichoderma sambuci (Jaklitsch & Voglmayr) Jaklitsch & Voglmayr, Mycotaxon 126: 153. 2014.
(≡) *Hypocrea sambuci* Jaklitsch & Voglmayr, Fungal Divers. 48: 213. 2011.
Typus: [specimen] (WU 29463).
Ex-type culture: None. Representative culture: CBS 126958.
Representative sequences: *tef*1: FJ860693, *rpb*2: FJ860585.
Note: The representative sequences are derived from DNA isolated directly from a stroma (WU 29467).

Trichoderma samuelsii Jaklitsch & Voglmayr, *in* Jaklitsch & al., Mycologia 104: 937. 2012.
Typus: [dry culture] (WU 31607).
Ex-type culture: CBS 130537.
Representative sequences: *tef*1: JN715655, *rpb*2: JN715599.

Trichoderma saturnisporopsis Samuels & Jaklitsch, *in* Samuels & al., Fungal Divers. 55: 103. 2012.
Typus: [dry culture] (BPI 882297).
Ex-type culture: CBS 130751.
Representative sequences: *tef*1: JQ685869, *rpb*2: DQ857348.

Trichoderma saturnisporum Hammill, Mycologia 62: 112. 1970.
Typus: [dry culture] USA: 'culture Hammill no. 85-68, isolated from forest soil in Clarke County, Georgia, June, 1968' (SYRF).
Ex-type culture: ATCC 18903 = CBS 330.70
Representative sequences: *tef*1: AY937414; *rpb*2: DQ087243, JN182309.

Trichoderma scalesiae Samuels & H.C. Evans, *in* Jaklitsch & al., Studies in Mycology 56: 172. 2006.
Typus: [dried culture] (BPI 872181).
Ex-type culture: CBS 120069.
Representative sequences: *tef*1: DQ841726, *rpb*2: EU252007.

Trichoderma semiorbis (Berk.) Jaklitsch & Voglmayr, Mycotaxon 126: 153. 2014.
(≡) *Sphaeria semiorbis* Berk., J. Bot. (Hooker) 2: 146. 1840.
(≡) *Hypocrea semiorbis* (Berk.) Berk., *in* Hooker, *Fl. Tasm.* 2: 278. 16 Aug 1859.
Typus: "*Sphaeria semiorbis* Berk., F.c. [annotated in pencil: 'Not distinct from *Sphaeria gelatinosa* Tode']" (K(M): 52655, Herb. Berk.).
Epitypus (***hic designatus***, MBT 201081): [specimen] NEW ZEALAND: *Nelson*: Nelson Lakes National Park, Lake Rotoiti, from S end of lake, trail along Travers River from Cold Water hut, elev. 650 m, 41°53' S, 171°51' E, on branches of *Nothofagus* sp., 8 Sep 1999, *G.J. Samuels 8728a & S.E. Dodd* (BPI 746666).
Ex-epitype culture: CBS 130716.
Representative sequences: *tef1:* JN133576, *rpb*2: JN133567.
Note: The type locality of *S. semiorbis* is not known with certainty. Berkeley (1840: 146) described two fungi from the collection of William Jackson Hooker, *Lentinus fasciatus* and *Sphaeria semiorbis.* The *Lentinus* was listed previously as *Lentinus villosus* by Berkeley in an account of fungi from Van Dieman's Land but he did not provide the provenance of the collection of *S. semiorbis.* In the protologue the only collecting information given is "On bark. Hab. unknown." We assume the original collection to have been made in Australia because the second known collection of this species is reported in Hooker's *Botany of the Antarctic Voyage*, although even in this report the only clue to its origin is its collector, Ronald Campbell Gunn, who sent specimens from Tasmania to J.D. Hooker in Kew between 1830 and 1860. Dingley (1956) examined a collection from Tasmania in Kew which she assumed to be the type collection, providing a description of this specimen and referring New Zealand collections she had earlier listed as *Hypocrea patella* to this species. In her description she described perithecia containing asci with mostly immature spores. However, as Berkeley himself noted in the protologue, the type collection of *S. semiorbis* is immature, lacking spores and asci. Dingley (1957) later described a *Trichoderma* asexual morph that was derived from her collections. She subsequently sent material to John Webster in Exeter. It is not known whether she sent a culture or a specimen from which Webster made a culture, but eventually a culture was deposited as CBS 244.63 with provenance '*Dingley No. 12,*' New Zealand: Mohaka. This culture was redescribed by Bissett (1991) as the asexual morph of *H. semiorbis* under the number DAOM 67636 = CBS 244.63. Bissett's description of *H. semiorbis* is consistent with Dingley's, and Dingley collections of *H. semiorbis* (PDD) are consistent with the type collection of *S. semiorbis.* However, the culture CBS 244.63 cannot be linked to any *Hypocrea* collection; there is no specimen of *H. semiorbis* in the Sheffield University Herbarium and none of the collections in PDD can be linked to a specimen or culture that Dingley (*Dingley 12*) sent to Webster. Thus a question remains as to the link between CBS 244.63, which is the only living culture that links Bissett and Dingley's concepts of the species and for which DNA sequences have been deposited in GenBank, and *H. semiorbis* as typified. An epitype for *S. semiorbis* is needed. There are three Dingley collections of *H. semiorbis* in her herbarium (PDD), all made from the same place in April and May 1953 (NEW ZEALAND: *Hawkes Bay*: Upper Mohaka River, Kaimanawa Range, elev. 2000 ft, on *Nothofagus fusca*, *J.M. Dingley s.n.* (PDD 12751 (May 1953), PDD 12755 (31 May 1953), PDD 12756 (April 1953) but none of them can be linked to a living culture and thus none of them can serve as an epitype. The material sent to Webster (*Dingley 12* = CBS 244.63) is derived from a Dingley collection of *H. semiorbis* that was made from the Mohaka River on *Nothofagus* sp., date unknown, and there is a culture in ICMP (ICMP 1693) that is derived from *H. semiorbis* collected by Dingley (*Dingley 584*) from the Mohaka River, from *Nothofagus* sp. in 1958, but the specimen from which this culture was derived cannot be located (PDD, SHU). DNA sequences (*tef*1, Samuels unpubl.) indicate that CBS 244.63 is the same species as ICMP 1693, but the question as to the identity of teleomorphic *H. semiorbis* remained open. A recent New Zealand collection from *Nothofagus* sp. and its culture complete this circle and permit stabilization of the name *H. semiorbis* by epitypification proposed above. DNA sequences derived from this specimen indicate that it is the same species as ICMP 1693 and CBS 244.63; morphologically the stromata agree well with the type collection of *S. semiorbis* and the Dingley collections of *H. semiorbis* in PDD cited above, and the asexual morph matches descriptions of the asexual morph of *H. semiorbis* in publications from Dingley and Bissett. Although we do not know the substratum of either of the collections of *H. semiorbis* reported by Berkeley, the type collection of *S. semiorbis* was possibly collected in Tasmania where *Nothofagus* is common and thus could have been the substratum of the type collection. All of Dingley's collections were from *Nothofagus.* Finally, the recent New Zealand collection was made in the South Island, which has a south temperate climate similar to that of Tasmania. Bissett (1991) and Chaverri *et al.* (2003a) redescribed the *Trichoderma* asexual morph of *H. semiorbis*, the description in the latter reference is based in part on the epitype collection. Chaverri *et al*. (2003a) redescribed the teleomorph based on the three Dingley collections cited above. *Hypocrea semiorbis* is common on *Nothofagus* in New Zealand but is not known outside of Australasia.

Trichoderma sempervirentis Jaklitsch & Voglmayr, *in* Jaklitsch & al., Persoonia 31: 143. 2013.
Typus: [metabolically inactive culture] (CBS 133498).
Ex-type culture: CBS 133498.
Representative sequences: *tef*1: KC285755, *rpb*2: KC285632.

Trichoderma seppoi Jaklitsch, *in* Jaklitsch, Gruber & Voglmayr, Karstenia 48: 5. 2008.
(≡) *Hypocrea seppoi* Jaklitsch, *in* Jaklitsch & al.,, Karstenia 48: 5. 2008.
Typus: [specimen] (WU 28698).

Ex-type culture: C.P.K. 3161 = CBS 122498.
Representative sequences: *tef*1: FJ179581, *rpb*2: FJ179617.

Trichoderma silvae-virgineae Jaklitsch, Fungal Divers. 48: 221. 2011.
Typus: [dry culture] (WU 29227a)
(=) *Hypocrea silvae-virgineae* Jaklitsch, Fungal Divers. 48: 221. 2011.
Typus: [specimen] (WU 29227).
Ex-type culture: CBS 120922.
Representative sequences: *tef*1: FJ860696, *rpb*2: FJ860587.

Trichoderma simmonsii P. Chaverri, F.B. Rocha, Samuels, Degenkolb & W. Jaklitsch, *in* Chaverri & al., Mycologia 107: 586. 2015.
Typus: [specimen] (BPI 1112907).
Ex-type culture: G.J.S. 91-138 = CBS 130431.
Representative sequences: *tef*1: AF443935, AF443936, AF443933; r*pb*2: FJ442757, AY391925, FJ442710.

Trichoderma sinense Bissett, C.P. Kubicek & Szakács, *in* Bissett & al., Can. J. Bot. 81: 572. 2003.
Typus: [dry culture] (DAOM 230000).
Ex-type culture: DAOM 230000.
Representative sequences: *tef*1: AY750889, *rpb*2: JN175528.

Trichoderma sinoluteum Z.X. Zhu & W.Y. Zhuang, Mycologia 107: 335. 2015.
Typus: CHINA: *Jilin*: Antu, Changbaishan, 1100 m, on twig, 26 Jul 2012, *W.Y. Zhuang*, *Z.X. Zhu*, *Z.Q. Zeng*, *H.D. Zheng* & *F. Ren* 8205 (HMAS 252868).
Ex-type culture HMAS 245077 = CGMCC 3.17528.
Representative sequences: *tef1*: KJ634777, *rpb2*: KJ634744.

Trichoderma sinuosum P. Chaverri & Samuels, Stud. Mycol. 48: 81. 2004 [“2004”].
Typus: [dry culture] BPI 843649.
(=) *Hypocrea sinuosa* P. Chaverri & Samuels, Stud. Mycol. 48: 812004 [“2004”].
Typus: [specimen] (BPI 843649).
Ex-type culture: CBS 114247.
Representative sequences: *tef*1: AY737743, AY391997; *rpb*2: FJ179619.
Note: *Trichoderma sinuosum* may represent a species complex within which three or more phylogenetic species can be seen (Jaklitsch & Voglmayr 2015).

Trichoderma solani Samuels, V. Doyle & V.S. Lopez, *in* Samuels & al., Fungal Divers. 55: 83. 2012.
Typus: [dried culture] (BPI 882298).
Ex-type culture: CBS 130506.
Representative sequences: *tef*1: JN175597, *rpb*2: JN175546.

Trichoderma songyi M.S. Park, S.-Y. Oh & Y.W. Lim, *in* Park & al., Antonie van Leeuwenhoek 106: 600. 2014.
Typus: [metabolically inactive culture] (SFC20130926-S001).
Ex-type culture: KCTC 46205 = CBS 138099.
Representative sequences: *tef*1: KJ636511, *rpb*2: KJ636525.

Trichoderma spinulosum (Fuckel) Jaklitsch & Voglmayr, Mycotaxon 126: 153. 2013.
(≡) *Hypocrea spinulosa* Fuckel, Jahrb. Nassauischen Vereins Naturk. 23/24: 184. 1870 [“1869”].
Typus: [GERMANY] “… im Frühling, auf einem sehr faulen Stengel von *Chelidonium majus*. Am Mühlberg bei Oestrich” (G).
Ex-type culture. None. Representative cultures: CBS 310.50, CBS 311.50, CBS 121272.
Representative sequences: *tef*1: FJ860701, *rpb*2: FJ860591.
Note: This species is not known to produce an asexual morph.

Trichoderma spirale Bissett, Can. J. Bot. 69: 2408. 1992 [“1991”].
Typus: [dry culture] (DAOM 183974).
Ex-type culture: DAOM 183974.
Representative sequences: *tef*1: AY50890, *rpb*2: FJ442694, KJ665348.

Trichoderma stercorarium (Barrasa, A.T. Martínez & G. Moreno) Jaklitsch & Voglmayr, Stud. Mycol. 80: 83. 2015.
(≡) *Aphysiostroma stercorarium* Barrasa, A.T. Martínez & G. Moreno, Can. J. Bot. 632441. 1986 [“1985”].
Typus: [specimen] SPAIN: Puerto de Samossierra, on cow dung, 16 Sep. 1982, *G. Moreno* (MA-Fungi 3059 [IJFM A-12]).
Ex-type culture: CBS 148.85 = ATCC 62321.
Representative sequences: *tef*1: FJ860607, *rpb*2: EF469103.

Trichoderma stilbohypoxyli Samuels & Schroers, *in* Samuels & al., Stud. Mycol. 56: 128. 2006.
Typus: [dry culture] (BPI 744463B).
Ex-type culture: CBS 992.97 = ATCC MYA 2970 = DAOM 231834.
(=) *Hypocrea stilbohypoxyli* B.S. Lu & Samuels, Sydowia 55: 265. 2003.
Typus: [specimen] (BPI 744463).
Representative sequences: *tef*1: DQ109546, *rpb*2: EU341805.

Trichoderma stipitatum Z.X. Zhu & W.Y. Zhuang, Persoonia 34: 122. 2015.
Typus: CHINA: *Jilin*: Jiaohe, Qianjin Forestry Farm, alt. 450 m, on rotten bark, 24 July 2012, *W.Y. Zhuang*, *Z.X. Zhu*, *Z.Q. Zeng*, *H.D. Zheng* & *F. Ren* 8152 (HMAS 266613).
Ex-type culture: HMAS 244908.
Representative sequences: *tef*1: KF29990, KF29991; *rpb*2: KF30011, KF320012.

Trichoderma stramineum P. Chaverri & Samuels, Stud. Mycol. 48: 86. 2004 [“2003”].
Typus: [dry culture] BPI 843667.
(=) *Hypocrea straminea* P. Chaverri & Samuels, Stud. Mycol. 48: 86. 2004 [“2003”]; nom. illegit. (Art. 53.1). *non* Petch (1920).
(≡) *Hypocrea straminella* P. Chaverri, Samuels & Minnis, *in* Minnis & al., Mycotaxon 109: 245. 2009.
Typus: [specimen] (BPI 843650).
Ex-type culture: G.J.S. 02-84 = CBS 114248 = DAOM 232840.
Representative sequences: *tef*1: AY737746, *rpb*2: AY391945.

Trichoderma strictipile Bissett, Can. J. Bot. 69: 2410. 1992 ["1991"]; as "*strictipilis*".
(≡) *Hypocrea strictipilosa* Chaverri & Samuels, Mycologia 95: 1128. 2003 [28 Apr 2004].
Typus: CANADA: *Québec*: Montreal, on rotting log, 20 Sep 1979, *G. P. White* (DAOM 172827).
Ex-type culture: DAOM 172827.
(=) *Hypocrea aureoviridis* f. *macrospora* Yoshim. Doi, Bull. Natl. Sci. Mus. Tokyo 14: 728. 1972.
Typus: [specimen] (TNS.D-148 = TNS-F 191611; isotypus NY No. 01293246).
(=) *Trichoderma fasciculatum* Bissett, Can. J. Bot. 69: 2379. 1992 ["1991"].
Typus: [dry culture] (DAOM 167646).
Representative sequences: *tef*1: AY937451, AF534628, FJ860704 ; *rpb*2: AF545555, FJ860594.
Note: *Trichoderma strictipile* and *H. strictipilosa* are based on the same type specimen; thus they are obligate synonyms.

Trichoderma strigosellum López-Quintero, W. Gams, Boekhout & Druzhinina, *in* López-Quintero & al., Antonie van Leeuwenhoek 104: 669. 2013.
Typus: [dried culture] COLOMBIA (HUA 179963) (isotypus CBS H-21054) (ex-type culture CBS 102817 = C.P.K. 3604).
Ex-type culture: CBS 102817
Representative sequences: *tef*1: EU248631, JQ425705; *rpb*2: EU248607, EU856360.

Trichoderma strigosum Bissett, Can. J. Bot. 69: 2411. 1992 ["1991"].
Typus: [dry culture] (DAOM 166121).
Ex-type culture: DAOM 1661214 = CBS 348.93.
Representative sequences: *tef*1: AY376057, *rpb*2: AF545556.

Trichoderma stromaticum Samuels & Pardo-Schultheiss, *in* Samuels & al., Mycol. Res. 104: 762. 2000.
Typus: **"**BRAZIL**:** Pará, Belem, from dead cocoa broom, *C. N. Bastos*, TVC, G.J.S. 97-183" (BPI 746496).
(=) *Hypocrea stromatica* J.L. Bezerra, J.C.B. Costa & C.N. Bastos, Fitopatol. Brasil. 28: 409. 2003.
Typus: BRASIL: *Bahia*:: Município de Ilhéus, Centro de Pesquisa do Cacau, 14° 45' S, 39° 13' W, 03 Jun 1998, sobre frutos secos de cacau, *J.L. Bezerra* (Herbário CEPEC, 94.140).
Ex-type culture: ATCC 204426 = CBS 101875.
Representative sequences: *tef*1: AY937418, *rpb*2: HQ342245.

Trichoderma subalpinum Jaklitsch, Fungal Divers. 48: 227. 2011.
Typus: [dry culture] (WU 29481a).
Ex-type culture: CBS 119128.
(=) *Hypocrea subalpina* Petrak, Ann. Mycol. 38: 2621940; nom. illegit. (Art. 53.1); non *Hypocrea discoidea* Berk. & Broome, 1873.
Lectotypus (*vide* Jaklitsch, Fungal. Divers. 48: 232. 2011): [specimen] AUSTRIA, Rehm, Ascomyceten 1446 (K(M) 165796).
(=) *Hypocrea rufa* var. *discoidea* Rehm, Hedwigia 41: 206. 1902.
Epitypus (*vide* Jaklitsch, ibid.): [specimen] AUSTRIA (WU 29481).
Ex-epitype culture: CBS 119128.
Representative sequences: *tef*1: FJ860705, *rpb*2: FJ860595.

Trichoderma subeffusum Jaklitsch, Fungal Divers. 48: 55. 2011.
Typus: [dry culture] WU 29487a.
(=) *Hypocrea subeffusa* Jaklitsch, Fungal Divers. 48: 55. 2011.
Ex-type culture: CBS 120929.
Representative sequences: *tef*1: FJ860707, *rpb*2: FJ860597.

Trichoderma sulawesense (Yoshim. Doi) Jaklitsch & Voglmayr, Mycotaxon 126: 154. 2014.
(≡) *Hypocrea sulawesensis* Yoshim. Doi, *in* Samuels & al., Mem. New York Bot. Gard. 59: 23. 1990.
Typus: [specimen] (NY No. 01169121).
Ex-type culture: G.J.S. 2000 (lost). Representative culture: G.J.S. 85-228 (lost).
Representative sequences: *tef*1: AY737730, AY392002; *rpb*2: AY391954.
Note: There are no longer living cultures of this species available.

Trichoderma sulphureum (Schwein.) Jaklitsch & Voglmayr, Mycotaxon 126: 154. 2013.
(≡) *Sphaeria sulphurea* Schwein., Trans. Amer. Philos. Soc. 4: 193. 1832.
(≡) *Hypocrea sulphurea* (Schwein.) Sacc., Syll. Fung. 2: 535. 1883.
Lectotypus (***hic designatus***, MBT 201082): USA: "[North Carolina?], Salem. 1221—Syn. Fung. 75" (PH 1107657). Isolectotypus: "Salem. 45" (PH 01107658); "Salem and Bethlehem" (K); 'Salem nec Pennsylv.' (BPI 801107, a microslide).
Ex-type culture: None.
Epitypus (***hic designatus,*** MBT 202326): [specimen] AUSTRIA (WU 29493).
Ex-epitype culture CBS 119929.
Representative sequences: *tef*1: FJ860709, *rpb*2: FJ860599.
Note: The original material of *S. sulphurea* is given as "*1221. 75. *S. sulphurea*, L.v.S., rara in cortice insidens, Salem nec Pennsylv." The specimen PH 01107657 includes two parts. One is labeled presumably in Schweinitz's' hand as "*Sphaeria sulphurea* 1221 – 75 Syn. Fung., Salem" The other is labeled in hand as "*Sphaeria sulphurea* Schw. β *parasitica* Schw. 1221— 75 Syn. Fung. Ohio." The printed label that contains these two specimens gives "Salem, Ohio." The specimen BPI 801107, from the Collins autograph collection (Shear & Stevens 1917a: 203), is labeled 'North Carolina, Salem' and is certainly part of the original material that was studied by Schweinitz. Unfortunately the packet is empty, save for a microscope slide. Schweinitz is known to have collected extensively both in Salem, North Carolina, and in Pennsylvania but he also travelled to Ohio, and he is known to have combined into one packet specimens of what he thought were the same species that were collected in different localities (Shear & Stevens, 1917a, b). We follow the Collins collection label in concluding that the original collection of

S. sulphurea was collected in Salem, North Carolina. The specimen in K is labeled 'Salem and Bethlehem' also is an isolectotype. We have not seen Schweinitz material of *S. sulphurea* from Pennsylvania.

Trichoderma surrotundum P. Chaverri & Samuels, Stud. Mycol. 48: 90. 2004 ["2003"].
Typus: [dry culture] BPI 843668.
(=) *Hypocrea surrotunda* P. Chaverri & Samuels, Mycologia 95: 1134. 2004 ["2003"].
Typus: USA: *Conecticut*: Fairfield County, Weston, Devil's Glen Conservancy, on decorticated wood, Nov 1988, *S. Stein* (NY).
Ex-type culture: G.J.S. 88-73 = CBS 111145
Representative sequences: *tef*1: AY737734, AF534594; *rpb*2: AF545540.

Trichoderma taiwanense Samuels & M.L. Wu, *in* Samuels & al., Stud. Mycol. 56: 130. 2006.
Typus: [dry culture] BPI 737694.
Ex-type culture: G.J.S. 95-93 = CBS 119058.
Representative sequences: *tef*1: DQ284973.

Trichoderma tawa P. Chaverri & Samuels, Stud. Mycol. 48: 92. 2004 ["2003"].
Typus: [dry culture] BPI 843669.
Ex-type culture: G.J.S. 97-174 = CBS 114233.
(=) *Hypocrea tawa* Dingley, Trans Roy Soc New Zealand 79: 335. 1952.
Typus: NEW ZEALAND: *Auckland*: Alfriston, on wood of *Beilschmiedia tawa*, 10 Aug 1946, *J.M. Dingley* (PDD 4628).
Representative sequences: *tef*1: FJ463313, *rpb*2: FJ463313.

Trichoderma taxi C.L. Zhang, F.C. Lin & C.P. Kubicek, *in* Zhang & al., FEMS Microbiol. Lett. 270: 93. 2007.
Typus: [metabolically inactive culture?] CHINA: *Jiangxi*: Guanshan Nature Reserve (28.2° N/114.3° E), isolated from old trunk of *Taxus mairei*, ZJUF0986 (China General Microbiological Culture Collection CGMCC 1672).
Ex-type culture: ZJUF0986 = CGMCC 1672.
Representative sequences: *tef*1: DQ859029, *rpb*2: DQ859032.
Note: In the protologue for *T. taxi* there is some confusion concerning its typification. The authors of this species do not specifically state that the holotype is a 'metabolically inactive culture' and the culture ZJUF0986 = CGMCC 1672 does not appear in the CGMCC on-line catalogue.

Trichoderma thailandicum P. Chaverri & Samuels, Stud. Mycol. 48: 95. 2004 ["2003"].
Typus: [dry culture] (BPI 843670).
(=) *Hypocrea thailandica* P. Chaverri & Samuels, Stud. Mycol. 48: 95. 2004 ["2003"].
Typus: [specimen] (BPI 745832).
Ex-type culture: G.J.S. 97-61 = CBS 114234 = DAOM 232842 = ATCC MYA-3233.
Representative sequences: *tef*1: AY737748, AY392005; *rpb*2: AY391957.

Trichoderma thelephoricola P. Chaverri & Samuels, Stud. Mycol. 48: 96. 2004 ["2003"].
Typus: [dry culture] BPI 843671.
(=) *Hypocrea thelephoricola* P. Chaverri & Samuels, Stud. Mycol. 48: 962004 ["2003"].
Typus: [specimen] (BPI 737702).
Ex-type culture: G.J.S. 95-135 = CBS 114237 = DAOM 232843 = ATCC MYA-3232.
Representative sequences: *tef*1: AY737735, AY392006; *rpb*2: AY391958.

Trichoderma theobromicola Samuels & H.C. Evans, *in* Samuels & al., Mycol. Res. 110: 390. 2006.
Typus: [dry culture] (BPI 871726).
Ex-type culture: DIS 85f = CBS 119120 = IMI 393419 = ATCC MYA-3640.
Representative sequences: *tef*1: EU856321, *rpb*2: FJ007374.

Trichoderma tomentosum Bissett, Can. J. Bot. 69: 2412. 1992 ["1991"].
Typus: [dry culture] (DAOM 178713a).
Ex-type culture: DAOM 178713a.
Representative sequences: *tef*1: AY750882, *rpb*2: AF545557.

Trichoderma tremelloides Jaklitsch, Fungal Divers. 48: 232. 2011.
Neotypus: [dry culture] WU 29508a.
(=) *Sphaeria tremelloides* Schum., Enum. Pl. 2: 173. 1803 : Fries, Syst. Mycol. 2: 235. 1823.
(≡) *Hypocrea tremelloides* (Schum. : Fr.) Fr., Summa Veg. Scand., Sectio Posterior p. 383. 1849.
Typus: [icon] Fl. Danica: pl. 1858 fig. 2 (C, *vide* Jaklitsch, Fungal Divers. 48: 232. 2011).
Epitypus (*vide* Jaklitsch in Fungal Divers. 48: 232. 2011): [specimen] (WU 29508).
Ex-epitype culture: CBS 121140.
Representative sequences: *tef*1: FJ860714, *rpb*2: FJ860603.

Trichoderma trixiae Samuels & Jaklitsch, *in* Jaklitsch & al., Persoonia 33: 133. 2013.
Typus: [metabolically inactive culture] (CBS 134702).
Ex-type culture: CBS 134702.
Representative sequences: *tef*1: DQ307526, DQ672606; *rpb*2: KC285770.

Trichoderma tropicosinense (P.G. Liu) P.G. Liu, Z.X. Zhu & W.Y. Zhuang, *in* Zhu & Zhuang, Persoonia 34: 126. 2015.
(≡) *Hypocrea tropicosinensis* P.G. Liu, *in* Liu & al., Mycotaxon 86: 278. 2003.
Typus: CHINA: *Yunnan*: Mengla, Cuipingfeng tropical rain forest park, alt. 800 m, on dead bark of *Castanopsis*, 1 Oct 1993, *P.G. Liu* D'93-40 (HKAS 26198).
Epitypus (***hic designatus***, MBT 201086): CHINA: *Jilin*: Jiaohe, Qianjin Forestry Farm, alt. 450 m, on rotten twig, 23 Jul 2012, *W.Y. Zhuang*, *Z.X. Zhu*, *Z.Q. Zeng*, *H.D. Zheng* & *F. Ren* 8082 (HMAS 252546).
Ex-epitype culture: HMAS 244983.
Representative sequences: *tef*1: KF923286, *rpb*2: KF923313.
Note: *Hypocrea tropicosinensis* was described without

reference to a culture or to DNA sequences. Zhu & Zhuang (2015) identified, cultured and sequenced a collection that they identified as *H. tropicosinensis,* but they did not designate an epitype. In the interest of stabilizing this name, we designate their collection as epitype.

Trichoderma tsugarense Yabuki & Okuda, *in* Yabuki & al., Mycoscience 55: 209. 2014.
Typus: [specimen] JAPAN (TNS-F-38437).
Ex-type culture: TAMA 0203 = NBRC 109641.
Representative sequences: *tef*1: AB807647, *rpb*2: AB807659.

Trichoderma turrialbense Samuels, Degenkolb, K.F. Nielsen & Gräfenhan, *in* Degenkolb & al., Mycol. Prog. 7: 217. 2008.
Typus: [dry culture] (BPI 878379).
Ex-type culture: CBS 112445.
Representative sequences: *tef*1: EU338284, *rpb*2: EU338321.

Trichoderma valdunense Jaklitsch, Fungal Divers. 48: 59. 2011.
Typus: [dry culture] WU 29561a.
(=) *Hypocrea valdunensis* Jaklitsch, Fungal Divers. 48: 59. 2011.
Typus: [specimen] (WU 29561).
Ex-type culture: CBS 120923.
Representative sequences: *tef*1: FJ860717, *rpb*2: FJ860605.

Trichoderma velutinum Bissett, C.P. Kubicek & Szakács, *in* Bissett & al., Can. J. Bot. 81: 579. 2003.
Typus: [dry culture] (DAOM 230013).
Ex-type culture: DAOM 230013.
Representative sequences: *tef*1: AF510444, *rpb*2: KF134794.

Trichoderma vermipilum Samuels, *in* Samuels & Ismaiel, Mycol. Prog. 11: 248. 2011.
Typus: [dry culture] (BPI 881031).
Ex-type culture: PPRI 3359 = CBS 127103.
Representative sequences: *tef*1: HQ342219, *rpb*2: HQ342282.

Trichoderma victoriense (Overton) Jaklitsch & Voglmayr, Mycotaxon 126: 154. 2013.
(≡) *Hypocrea victoriensis* Overton, *in* Overton & al., Stud. Mycol. 56: 55. 2006.
Typus: [specimen] (BPI 747361).
Ex-type culture: G.J.S. 99-200 = CBS 140064.
Representative sequences: *tef*1: DQ835473, *rpb*2: DQ835517.

Trichoderma vinosum Samuels, *in* Jaklitsch & al., Stud. Mycol. 56: 13. 2006.
Typus: [dry culture] (PDD 88476).
Ex-type culture: G.J.S. 99-158 (= collection G.J.S. 8702) = ICMP 16294 = CBS 119087.
(=) *Hypocrea vinosa* Cooke, Grevillea 8: 65. 1879, *non* Pat. 1881.
Typus: NEW ZEALAND: Waitaki, [?*Berggren*] 307 (K, herb. Cooke].
Epitypus (*vide* Samuels & al., Stud. Mycol. 56: 165. 2006): NEW ZEALAND [specimen] (PDD 88476).
Ex-epitype culture 119087 = ICMP 16294.
Representative sequences: *tef*1: AY376047, DQ307527; *rpb*2: KC285778, KC285779.

Trichoderma virens (J.H. Miller, Giddens & A.A. Foster) Arx, Nova Hedwigia Beih. 87: 288. 1987.
(≡) *Gliocladium virens* J.H. Miller, Giddens & A.A. Foster, Mycologia 49: 792. 1957.
Lectotypus (***hic designatus***, MBT 201086): [metabolically inactive culture] [USA] "No. 167, in Norfolk cultivated soil, Bleckley Co., Ga., January 6, 1956. *J. E. Giddens*" (CBS 249.59).
(=) *Gliocladium flavofuscum* J.H. Miller, Giddens & A.A. Foster, Mycologia 49: 793. 1957.
(≡) *Trichoderma flavofuscum* (J.H. Miller, Giddens & A.A. Foster) Bissett, Can. J. Bot. 69: 2385. 1992 ["1991"].
Lectotypus (***hic designatus***, MBT 201087): [metabolically inactive culture] USA: "No. 1263, from soil, 2 inch depth, Herty Nursery, Dougherty Co., Ga., August 2, 1956. *A. A. Foster*" CBS 248.59 = DAOM 167652 ex ATCC 13308).
(=) *Hypocrea virens* P. Chaverri, Samuels & E.L. Stewart, Mycologia 93: 1120. 2001.
Typus: [specimen] (BPI 737768).
Representative cultures: ATCC 13213 = CBS 249.59. ATCC 13308 = CBS 248.59.
Representative sequences: *tef*1: AY750891, AF534631; *rpb*2: AF545558.
Note: Miller *et al.* (1957) did not indicate a place of deposit for the types of their new species, *G. virens* and *G. flavofuscum*, and no herbarium material can be found for them. Neither did the authors specifically indicate a culture collection into which the type cultures were deposited. However the ex-type cultures of *G. virens* and *G. flavofuscum*, respectively, were deposited by the authors in ATCC, which subsequently (1959) deposited them in CBS. Because these cultures that are deposited In at least two culture collections are part of the original gatherings, they may be interpreted as isotypes. Accordingly, s we designate the metabolically inactive cultures that are stored in CBS for of each of these names as their respective lectotypes.

Trichoderma virescentiflavum (Speg.) Jaklitsch & Voglmayr, Mycotaxon 126: 154. 2014.
(≡) *Hypocrea virescentiflava* Speg., Bol. Acad. Nac. Ci. Argent. 11: 151. 1889.
Typus: BRAZIL: Apiahy, on *Bambusa,* 1888, *J. Puiggari* 2353 (LPS).
Ex-type culture: None. Representative culture: P.C. 278 (lost).
Representative sequences: *tef*1: AY737749, AY392007; *rpb*2: AY391959.
Note: Chaverri & Samuels (2003) cultured and sequenced a Costa Rican collection (INB, culture P.C. 278) identified as this species. That culture was lost but the sequences were deposited in GenBank.

Trichoderma viridarium Jaklitsch, Samuels & Voglmayr, Persoonia 33: 126. 2013.
Typus: [specimen] (WU 31627).

Ex-type culture: CBS 132568.
Representative sequences: *tef*1: KC285658; *rpb*2: DQ672608, KC285760.

***Trichoderma viride** Pers., Neues Mag. Bot. 1: 92. 1794 : Fr., Syst. Mycol. 3: 215. 1832.
Lectotypus (*vide* Bisby, Trans. Br. Mycol. Soc. 23: 152. 1939): **(**L 910 263 877). Epitypus (*vide* Jaklitsch & al., Stud. Mycol. 56: 154. 2006) [dry culture] (WU 24013a).
Ex-epitype culture: CBS 119325.
(=) *Sphaeria rufa* Pers., Obs. Mycol. 1: 20. 1794 : Fr., Syst. Mycol. 2: 235. 1822.
(≡) *Hypocrea rufa* (Pers. : Fr.) Fr., Summa Veg. Scand., Sectio Post. 383. 1849.
Neotypus (*vide* Jaklitsch & al., Stud. Mycol. 56: 154. 2006): Fries, Scler. Suec. no. 303 (UPS).
Epitypus (*vide* Jaklitsch & al., ibid. p. 154): [specimen] (WU 24093].
Representative sequences: *tef*1: DQ672617, *rpb*2: EU711362.
Note: *Trichoderma viride* is the type species of *Trichoderma.* Its connection with *Hypocrea rufa*, though for a long time generally recognized, was fixed by the epitypification of Jaklitsch & al. (2006).

Trichoderma viridescens (A.S. Horn & H.S. Williamson) Jaklitsch & Samuels, *in* Jaklitsch & al., Stud. Mycol. 56: 156. 2006.
(≡) *Eidamia viridescens* A.S. Horn & H.S. Williamson, Ann. Bot. 37: 396. 1923,
Neotypus (*vide* Jaklitsch et al. in Persoonia 31: 126. 2013): [icon] (Horne & Wiliamson in Ann. Bot. 37: 397, Fig. 5. 1923).
Epitypus (*vide* Jaklitsch & al. in Persoonia 31: 126. 2013): [specimen] (WU 31264).
Ex-epitype culture: CBS 132573.
Representative sequences: *tef*1:KC2856476, *rpb*2: KC285758.
Note: Jaklitsch & al. (2006) linked *T. viridescens* to the sexual morph *H. viridescens* Jaklitsch & Samuels. However in a revision of the *T. viridescens* complex Jaklitsch et al. (2013) concluded that *H viridescens* is actually the sexual morph of *T. paraviridescens* and that *T. viridescens* was linked to an unnamed sexual morph.

Trichoderma viridialbum Jaklitsch, Samuels & Voglmayr, Persoonia 33: 135. 2013.
Typus: [metabolically inactive culture] (CBS 133495).
Ex-type culture: CBS 133495.
Representative sequences: *tef*1: KC285705, KC285706; *rpb*2: KC285774.

Trichoderma virilente Jaklitsch & Voglmayr, *in* Jaklitsch & al., Persoonia 33: 131. 2013.
Typus: [specimen] (WU 31628).
Ex-type culture: CBS 132569.
Representative sequences: *tef*1: KJ665772, KC285692; *rpb*2: KC285767.

Trichoderma voglmayrii Jaklitsch, *in* Jaklitsch & al., Mycologia 97: 1368. 2005.
Typus: [dry culture] (WU 25711a).
(=) *Hypocrea voglmayrii* Jaklitsch, *in* Jaklitsch & al., Mycologia 97: 1368. 2005.
Typus: [specimen] (WU 25711).
Ex-type culture: CBS 117711.
Representative sequences: *tef*1: DQ086146, *rpb*2: FJ179622.

Trichoderma yunnanense Z.F. Yu & K.Q. Zhang, *in* Yu & al., Antonie van Leeuwenhoek 92: 104. 2007. Non *Podostroma yunnanense* M. Zang, Mat. Diagn. Fung. Oecon.Yunnan. 21: 2. 1976.
Typus: CHINA: *Yunnan*: near Yuxi County, isolated from tobacco rhizosphere, Jun. 2002, *Z.F. Yu (*YMF 1.01694 [Key Laboratory of Yunnan Microbiology Fermentation]).
Ex-type culture: YMF 1.0169 = CBS 121219.
Representative sequences: *tef*1: AY94182, *rpb*2: GU198274.
Note: *Podostroma yunnanense* is distinct from *T. yunnanense.* Apparently *P. yunnanense* has not been cultured or sequenced.

NAMES IN *TRICHODERMA* NOT CURRENTLY IN USE

Where the names in *Trichoderma* are basionyms of accepted species names in other genera, the current pacement is indicated in **bold**, italic type.

Trichoderma aeruginosum Link, Mag. Gesellsch. naturf. Freunde, Berlin 8: 41. 1816.

Trichoderma aeruginosum Chevall., Fl. Gén. Env. Paris: 54. 1826; nom. illegit. (Art. 53.1); non *T. aeruginosum* Link. 1816.
Note: MycoBank gives *T. aeruginosum* Chevall. as a synonym of *T. violaceum* Oudem., but without explanation. In the original description of the latter species, no mention is made of *T. aeruginosum*. The protologue of *T. aeruginosum* Chevall. does not permit speculation as to the identity of the species.

Trichoderma album Preuss, Linnaea 24: 141. 1851.

Trichoderma arachnoideum Kuritzina & Sizova, Mykol. Fitopatol. 1: 343. 1967.

Trichoderma atroviride Bissett, Can. J. Bot. 62: 930. 1984 *non* P. Karst.
(=)***Trichoderma ghanense***.

Trichoderma aureum Pers., Obs. mycol. 1: 99. 1796.
(≡) *Sporotrichum aureum* (Pers.) Fries, Syst. Mycol. 3(2): 418. 1832 fide Hughes (1958).
(=) ***Botryobasidium aureum*** Parmasto, Eesti NSV Tead. Akad. Toim., Biol. Seer. 14(2): 220. 1965.

Trichoderma brassicae Schum., Enum. Pl. 2: 235. 1803.

Trichoderma caesium Pers**,** Neues Mag. Bot. 1: 92. 1794.

(=) ***Xylohypha nigrescens*** (Pers.) E.W. Mason, *in* Deighton, Mycol. Pap. 78: 43. 1960.

Trichoderma candidum Alb. & Schwein., Consp. Fung. 137. 1805.

Trichoderma carneum Schum., Enum. Pl. 2: 236. 1803.

Trichoderma cinnabarinum Wallroth, Fl. Crypt. Germ. 2: 246. 1833.

Trichoderma collae (Schwein.) Sacc., Syll. Fung. 4: 60. 1886.
(≡) *Pyrenium collae* Schwein., Trans. Am. Phil. Soc., ser. 2 4(2): 187, 266. 1832.

Trichoderma cordobense Speg., Bol Acad. Nac. Cienc. Córdoba 29(2-3): 175. 1926.

Trichoderma corfecianum Sacc., Ann. Mycol. 9: 254. 1911.

Trichoderma croceum Bissett, Can. J. Bot. 69: 2379. 1992 [“ 1991”].
(=)***Trichoderma polysporum***.

Trichoderma corrugatum (Yoshim. Doi, P.G. Liu & M. Tamura) P.G. Liu, Z.X. Zhu & W.Y. Zhuang, Mycosystema 33: 1204. 2014.
(≡) *Hypocrea corrugata* Yoshim. Doi, P.G. Liu & M. Tamura, Bull. Nat. Sci. Mus., Tokyo, B 27(2, 3): 58. 2001.
Typus: [specimen] CHINA. Jilin, Dunhua, Changbaishan, alt. 1300 m, on bark, 1998 Sept 6, *P.G. Liu & Y. Doi* DL’98-15 (HKAS 32630, Isotypus: TNS F-7034 = Doi D.9754).
Note: When it was originally described a verticllium-like *Trichoderma* asexual morph was described for this species but there was no indication that a culture had been placed in a public collection, although a culture was said to have been kept in the collection of P.-G. Liu at HKAS. There are no sequences deposited in GenBank for this species. Thus we do not include *T. corrugatum* among the ‘accepted’ species of *Trichoderma* at this time.

Trichoderma cuneisporum P. Chaverri & Samuels, Stud. Mycol. 48: 65. 2004 [“2003”].
(=) ***Trichoderma longipile***.

Hypocrea discoidea Berk. & Broome, J. Linn. Soc. Bot. 14: 113. 1873.
(≡) ***Hypocrella discoidea*** (Berk. & Broome) Sacc., Michelia 1:322. 1878**.**
Typus: Ceylon, on dead leaves of *Zingiber* (K, ex herb. Berk.).
*Note***:** The holotype specimen consists of a piece of stiff paper with two pieces of leaf glued to it. There are scale insects on the leaf pieces. Five 3 mm diam, orange stromata are glued separately to the paper. Each stroma is a hemispherical aggregate comprising 100 or more cespitose, orange perithecia. Ascospores are filiform and remain entire in the ascus. The ascal apex is typical of the Clavicipitaceae.

Trichoderma dubium Persoon, Syn. Meth. Fung. : 233. 1801.
(≡) *Acladium dubium* (Alb. & Schwein.) S. Hughes, Can. J. Bot. 36: 731. 1958.
(=) ***Botryobasidium aureum*** Parmasto, Eesti NSV Tead. Akad. Toim., Biol. seer 14(2): 220. 1965.

Trichoderma dubium Alb. & Schwein., Consp. fung. (Leipzig): 136 (1805). Nom. Illegit; (Art. 53.1). Non *T. dubium* Pers., Syn. Meth. Fung.: 233. 1801.
(=) ***Botryobasidium aureum*** Parmasto, Eesti NSV Tead. Akad. Toim., biol. Seer. 14(2): 220. 1965.

Trichoderma fasciculatum Bissett, Can. J. Bot. 69: 2379. 1992 [“1991”].
(=) ***Trichoderma strictipile***.

Trichoderma flavum Sommerf., Suppl. Fl. Lapp.: 312. 1826.

Trichoderma fomitopsis (P.G. Liu & Yoshim. Doi) P.G. Liu, Z.X. Zhu & W.Y. Zhuang, Mycosystema 33: 1204. 2014.
(≡) *Hypocrea fomitopsis* P.G. Liu & Yoshim. Doi, Mycosystema 19: 324, 2000.
Typus: [specimen] CHINA: *Yunnan*: Lijiang, alt. 3200 m, on fruitbody of *Fomitopsis pinicola* (Sw.) P. Karst. 1993 Nov 15, *Z.L. Liu* D’93-59 (HKAS 26205, Isotypus TNS-D-8699).
Note: When *H. fomitopsis* was described, a *Trichoderma* asexual morph having pachybasium-type branching and hyaline/white conidia was described for the species. However no indication was given that a culture had been deposited in a public collection. The authors did not sequence the culture. An unpublished sequence (18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and 28S ribosomal RNA gene, partial sequence) was deposited in GenBank (JF905628) by N Fan (College of Life Sciences, Nanjing Agricultural University, No. 1 Weigang Xuanwu District, Nanjing, Jiangsu 210095, China) for a cellulose degrading culture identified as *H. fomitopsis*. Because there is no indication of how the culture was identified, and no specimen or culture number was indicated with the deposit, and because sequence of the RNA gene cluster are too highly conserved to distinguish *Trichoderma* species, the identity of this accession is in doubt. We do not include *T. fomitopsis* among the names of *Trichoderma* that we accept as being in use at this time.

Trichoderma fuliginoides Pers., Syn. Meth. Fung.: 231. 1801.

Trichoderma fuscum Schum., Enum. Pl. 2: 236. 1803.

Trichoderma glaucum E.V. Abbott, Iowa St. Coll. J. Sci. 1: 27. 1927.

Trichoderma globosum Schwein., Schr. naturf. Ges. Leipzig 1: 77. 1822.
(≡) ***Conoplea globosa*** (Schwein.) S. Hughes, Can. J. Bot. 36: 755. 1958.

Trichoderma granulosum Fuckel, Jahrb. Nassau. Ver. Naturk. 23-24: 185. 1870 [„1869“].

Trichoderma guttatum Alb. & Schwein., Consp. fung. p. 137. 1805.

Trichoderma lacteum Bissett, Can. J. Bot. 69: 2367. 1992.
(=) ***Trichoderma citrinum***.

Trichoderma laeve Pers., Obs. Mycol. 1: 12. 1796.
Note: Hughes (1958) did not offer an opinion on the application of this name.

Trichoderma laeve Schumach., Enum. Pl. 2: 236. 1803; nom. Illegit. (Art. 53: 1).

Trichoderma lateritio-roseum Libert, *in* Cooke, Grevillea 8: 83. 1880.

Trichoderma lignorum (Tode) Harz, Bull. Soc. Imp. Nat. Moscou 44: 117. 1872 [1871].
(≡) *Pyrenium lignorum* Tode, Fung. mecklenb. 1: 33. 1790.
Note: *Trichoderma lignorum* is generally considered a synonym of *T. viride.*

Trichoderma lignorum var**. majus** Mańka & Gierczak, Práce Kom. Nauk Roln. Kom. Nauk Leśnych 9(1): 24. 1961; as “*major*”.

Trichoderma lignorum var. **narcissi** (Tochinai & Shimada) Pidopl., Grib. Fl. Grub. Korm.: 182. 1953.
(≡) *Sporotrichum narcissi* Tochinai & Shimada, Trans. Sapporo Nat. Hist. Soc.: 124. 1930.
Note: The ex-type culture of this variety (= CBS 316.31) is morphologically *T. harzianum.*

Trichoderma minimum (Speg.) Gunth. Müller, Wiss. Z. Humboldt-Univ. Berl. 14: 775. 1965; as “*minima*”.
(≡) *Sporotrichum minimum* Speg., Anal. Soc. Ci. Argentina 13: 24. 1882.
(=) ***Beauveria bassiana*** (Bals.-Criv.) Veuill., Bull. Soc. Bot. Fr. 59: 40. 1912 (*fide* MycoBank).

Trichoderma minutum Bain., Bull. Soc. Mycol. Fr. 22: 133. 1906.
Note: Rifai (1969) synonymized *T. minutum* Bain. under *T. polysporum,* but Bain.´s pl. XIV, figs. 14–16 do not appear to be *T. polysporum* and in fact might not even be a *Trichoderma.*

Trichoderma mycophilum (Persoon) Schwein., Schr. Naturf. Ges. Leipzig 1: 76. 1822.
(≡) *Uredo mycophila* Pers., Ann. Bot. (Usteri) 15: 16. 1796.
(=) ***Hypomyces chrysospermus*** Tul. & C. Tul. Ann. Sci. Nat. Bot., sér. 4. 13:16. 1860 (*fide* Rogerson & Samuels, 1994).

Trichoderma narcissi (Tochinai & Shimada) Tochinai & Shimada, Trans. Sapporo nat. Hist. Soc. 12: 24 (1931).
(≡) *Sporotrichum narcissi* Tochinai & Shimada, Trans. Sapporo nat. Hist. Soc. 11: 124. 1930.
(=) ***Trichoderma harzianum*** s. lat. (*fide* Rifai, 1969).
Ex-type culture CBS 316.31.

Trichoderma nigrescens Pers., Syn. Meth. Fung.: 232. 1801.
(≡) ***Xylohypha nigrescens*** (Pers.) E.W. Mason ex S. Hughes 1958 (*fide* Hughes, 1958).

Trichoderma nigrovirens Goddard, Bot. Gaz. 56: 273. 1913.

Trichoderma nigrovirens P. Chaverri & Samuels, Stud. Mycol. 48:78. 2004; nom. illegit. (Art. 53:1); non Goddard 1913.
(≡) ***Trichoderma pseudonigrovirens.***

Trichoderma nunbergii Szilv., Zentbl. Bakt. ParasitKde, Abt. II 86: 135 (1932).

Trichoderma parceramosum Bissett, Can. J. Bot. 69: 2418. 1991 [1992].
(=) ***Trichoderma ghanense***.

Trichoderma pedunculatum Schumach., Enum. Pl. 2: 236. 1803. 236. 1803.

Trichoderma penicillatum Wallr., Fl. crypt. Germ. 2: 246. 1833.

Trichoderma pezizoideum Wallr., Fl. crypt. Germ. 2: 246. 1833; **nom. rej. prop**. (Art. 53, voted example 11); non *T. pezizoides*.
Note: Samuels (2014) proposed rejection of this name.

Trichoderma pyrenium (Tode) Pers., Syn. Meth. Fung. 1: 233. 1801.
(≡) *Trichoderma aureum* (Tode) Pers., Römer’s Neues Mag. Bot. 1:92. 1794.
(≡) *Pyrenium lignorum* [var.] β. *aureum* Tode, Fungi Mecklenb. Sel. 1:33. 1790.
Note: This synonymy is from Hughes (1958). Hughes incuded this name in square brackets with the annontation: “Quid?” The identity of *T. pyrenium* (Tode) Pers. is not known.

Trichoderma pyrenium Schumach., Enum. pl. 2: 235. 1803; nom. illegit. (Art. 53.1); non *T. pyrenium* (Tode) Pers.

Trichoderma racemosum McAlpine, Fungus Dis. Stone-fruit Austr.: 105. 1902.

Trichoderma roseum Pers., Syn. Meth. Fung. 1: 231. 1801.
(≡) ***Trichothecium roseum*** (Pers.) Link (*fide* Hughes, 1958).

Trichoderma spadiceum Schwein., Schr. naturf. Ges. Leipzig 1: 51. 1822.
(≡) *Hyphelia spadicea* (Schwein.) Fr., Syst. mycol. 3(1): 212. 1829.

(≡) ***Coniosporium spadiceum*** (Schwein.) U. Braun, Mycol. Balc. 6: 108. 2009.

Trichoderma sporulosum (Link) S. Hughes, Can. J. Bot. 36: 820. 1958.
(=) ***Trichoderma polysporum***.

Trichoderma stellatum (B.S. Lu, Druzhinina & Samuels) Jaklitsch & Voglmayr, Mycotaxon 126: 153. 2014.
(=) ***Trichoderma polysporum***.

Trichoderma subsulphureum (Syd.) Jaklitsch & Voglmayr, Mycotaxon 126: 153. 2013.
(≡) *Hypocrea subsulphurea* Syd. In De Wildeman, Flore Bas et Moyen-Congo: 15, figs. 13, 14. 1909.
Typus: "Kisantu, 1907 (*H. Vanderyst*)."
Ex-type culture. None. Representative culture: None.
Note: Overton *et al.* (2006) did not locate the type specimen of *H. subsulphurea* in S, and the protocol did not include illustrations. Overton *et al.* (2006) identified a recent (2002) Japanese collection as *H. subsulphurea*, from which they obtained a culture and DNA sequences. Although Overton *et al.* (2006) reported that the specimen (*Overton M 141*) had been deposited in BPI, there are no specimens of *H. subsulphurea* or *Hypocrea* specimens collected in Japan in 2002 in BPI. Moreover, the culture from the Overton specimen has apparently been lost. Thus *T. subsulphureum* is only known from DNA sequences of doubtful origin deposited in GenBank (ITS DQ835509, *tef*1 DQ835492, *rpb*2 DQ83552).

Trichoderma sympodianum Kulik, *Notul. syst. Sect. cryptog. Inst. bot. Acad. Sci. U.S.S.R* 13: 137. 1960

Trichoderma todica Sokoloff & Toda, nom. inval. (Art. 32.1).
Note: This name has not been effectively published; it is refered to as 'sp. nov NRRL 3091' in U.S. patent no. US 3323996 A, which is *T. ghanense* (Samuels *et al.* 1998).

Trichoderma tuberculatum Pers., Obs. Mycol. 1: 12. 1796.
Note: Hughes (1958) did not offer an opinion on this species.

Trichoderma varians Sartory & Bain., Bull. Soc. Bot. Fr. 59: 346. 1912.

Trichoderma varium Ehrenb., Sylv. Mycol. Berol.: 22. 1818.

Trichoderma violaceum Oudemans, Ned. kruidk. Archf, 3 sér. 2(4): 1123. 1904.
(=) *Trichoderma aeruginosum* Chevall., Fl. Gén. Env. Paris 1: 54. 1826; nom. illegit. (Art. 53.1); non *T. aeruginosum* Link 1816.
Note: MycoBank indicates that the illegitimate name *T. aeruginosum* Cheall. is *T. violaceum*, but without explanation. Conidia of *T. aeruginosum* are described as '… presque globuleuses, violacé-tendre a l'état isolé, violacé-noirâtre en masse, apiculées à la base, et appliquées par moyen de cette petite proémence à l'entour du sommet de la hyphe, lequel par là semble cinglé d'un anneau colorié.' This description suggests that the fungus is not a *Trichoderma*.

Trichoderma viride Schumach., Enum. Pl. 2: 235. 1803; nom illegit. (Art. 53:1); non *T. viride* Pers. 1791.

Trichoderma viride var. **kizhanense** Krapiv., L.A. Poljak. & Sizova, *in* Krapivina & al., Mikol. Fitopatol. 9: 143. 1975.

Trichoderma vulpinum Fuckel, Jahrb. Nassau. Ver. Naturk. 27-28: 80. 1874.

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