

(2517–2519) Proposals to conserve the names *Balansia claviceps* against *Ephelis mexicana*, *Claviceps paspali* against *Ustilagopsis deliquescens*, and *Tolypocladium inflatum* against *Cordyceps subsessilis* (Ascomycota: Sordariomycetes: Hypocreales)

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In the course of updating the scientific names of plant-associated fungi in the U.S. National Fungus Collections Databases to conform with the requirement of one scientific name for each fungal species (ICN, McNeill & al. in Regnum Veg. 154. 2012), several scientific names currently in use were identified that should be changed to the oldest epithet in the oldest generic name. However, the names of these economically important fungi are in such widespread use that to change them would be disruptive. These names are herein proposed for conservation, following Art. 14.2.

(2517) *Balansia claviceps* Speg. in Anales Soc. Ci. Argent. 19: 46. Jan 1885, nom. cons. prop.

Typus: Paraguay, fluminis Pirayú, on *Setaria*, 1879, *Balansa* 2755 (LPS No. 1647; isotypus: BPI barcode 634972).

(=) *Ephelis mexicana* Fr. ex Berk. in J. Linn. Soc., Bot. 10: 353. 1869, nom. rej. prop.

Lectotypus (hic designatus): Mexico, *Fries* ex Herb. Berkeley (K(M) No. 233691).

Balansia claviceps Speg. causes a disease referred to as false smut or flower blight, which infects living inflorescences of grasses in tropical and subtropical regions (Reddy & al. in Mycologia 90: 108. 1998) and produces alkaloids that provide protection to grasses (White in Bacon & Hill, Neotyphodium/Grass Interactions. 2013). *Ephelis mexicana* Fr. ex Berk. has been used for the asexual morph of *B. claviceps*. The relationship between these names was confirmed by Diehl (in Agric. Monogr. U.S.D.A. 4: 1. 1950) and later authors (Bacon & White, Biotechnol. Endophyt. Fungi Grasses. 1994; White, l.c.). The generic names *Balansia* Speg. (in Anales Soc. Ci. Argent. 19: 45. 1885), typified by *B. claviceps* Speg. 1885, and *Ephelis* Fr. (Summa Veg. Scand.: 370. 1849), typified by *E. mexicana* Fr. ex Berk. 1869, compete for use. Rossman & al. (in IMA Fungus 7: 289. 2016) determined that *Balansia* was a more commonly used generic name than *Ephelis* and recommended the generic name *Balansia* for protection under Art. 14.13. At the species level, *E. mexicana* provides an older epithet for *B. claviceps*. Although the name *E. mexicana* has been attributed to Fries (l.c.) by most authors, Atkinson (in J. Mycol. 11: 248. 1905) noted that Berkeley (in J. Linn. Soc., Bot. 10: 341–392. 1869) first validly published this name as explained below. *Balansia claviceps* (Google Scholar Search [GSS] = 861 results) is used much more widely than

Ephelis mexicana (GSS = 35 results) in the worldwide plant pathology literature, so the name *B. claviceps* is proposed for conservation.

The holotype of *Balansia claviceps* is housed at LPS. Although the name *Ephelis mexicana* has long been cited as published in Fries (l.c.), Atkinson (l.c.) questioned the place of publication. He noted that while Fries (l.c.) mentioned the genus (“*Ephelis* Fr. Fung. Mexic.”), “he does not appear to have published the specific name nor a species description.” Berkeley (l.c.) was the first author to publish the name *E. mexicana* with reference to Fries (l.c.). A specimen at K from Berkeley’s herbarium was located that is apparently the original specimen mentioned by Fries and later described by Berkeley. The protologue of this name (Berkeley, l.c.: 353) is published in an article entitled “On a collection of fungi from Cuba”, so additional specimens that may have been examined by Berkeley may be from Cuba. In the first part of this series of publications on Cuban fungi, Berkeley & Curtis (in J. Linn. Soc., Bot. 10: 280. 1869) stated that the account is based on “collections ... made by Mr. Charles Wright ...” In the protologue to *E. mexicana*, Berkeley (l.c. 353) lists this name as number 567 and attributes it to “Fr. Fung. Mex. (729)”. Berkeley’s citation of the Wright specimen or species no. 729 suggests that he examined specimens from Cuba, which would also be original material for this name. Two such specimens were located at FH with the following data: Cuba, on the inflorescence of grasses (729), *Wright s.n.*, Cuban Fungi 567 (FH in Curtis Herbarium, FH in Fungi Cubensis Wrightianae). From the original material, the specimen at K(M) from Berkeley’s herbarium is designated as the lectotype.

(2518) *Claviceps paspali* F. Stevens & J.G. Hall in Bot. Gaz. 50: 462. 20 Dec 1910, nom. cons. prop.

Typus: U.S.A., North Carolina, Raleigh, on *Paspalum dilatatum*, Oct 1906, *Stevens* 628 (BPI barcode 633398).

(=) *Ustilagopsis deliquescens* Speg. in Anales Soc. Ci. Argent. 10: 6. Jul 1880, nom. rej. prop.

Holotypus: Argentina, Province Buenos Aires, on immature ovaries of *Paspalum notatum*, 1880, *Spegazzini* (LPS No. 4591).

Claviceps paspali F. Stevens & J.G. Hall causes an ergot disease of *Paspalum* that occurs throughout the world (CMI Distrib. Maps Pl. Dis. 90: 1. 1984; Raynal in Cryptog. Mycol. 17: 21. 1996; Velasquez-Valle & al. in Revista Mex. Fitopatol. 16: 42. 1996; Farr & Rossman,

U.S. National Fungus Collections Databases, retrieved 20 Jan 2017, from <https://nt.ars-grin.gov/fungalatabases>). Some authors regard *C. deliquescens* (Speg.) Hauman 1922, based on *Ustilagopsis deliquescens* Speg. 1880, and *C. rolfsii* F. Stevens & J.G. Hall 1910 as synonyms of *C. paspali* (Wolf & Wolf, *The Fungi*. 1947; Langdon in *Trans. Brit. Mycol. Soc.* 35: 74. 1954). The name *U. deliquescens* Speg. is the type of the generic name *Ustilagopsis* Speg. (l.c. 1880: 5), now considered a synonym of *Claviceps* Tul. (in *Ann. Sci. Nat., Bot., sér. 3*, 20: 43. 1853) by Rossmann & al. (l.c.: 297). Neither the generic name *Ustilagopsis* (GSS = 14 results) nor the species name *U. deliquescens* (GSS = 9 results) has been widely used, so these names should be rejected. Because *C. paspali* and *C. rolfsii* were published in the same article (Stevens & Hall in *Bot. Gaz.* 50: 460. 1910), they had equal priority until Wolf & Wolf (l.c.: 196) treated *C. rolfsii* as a synonym of *C. paspali*. *Claviceps paspali* is used more frequently than *C. rolfsii*. Given the widespread use of *C. paspali* for the ergot disease on *Paspalum* (Raynal, l.c.; Roane & Roane in *Virginia J. Sci.* 60: 13. 1997; Tooley & al. in *Mycologia* 93: 541. 2001; GSS = 1920 results), this name is proposed for conservation against *U. deliquescens*.

The holotype specimen of *C. paspali* was located at BPI. The holotype specimen of *U. deliquescens* is housed at LPS.

(2519) *Tolypocladium inflatum* W. Gams in *Persoonia* 6: 185. 23 Mar 1971, nom. cons. prop.

Typus: Austria, Tirol, Ötztal, Obergurgl, alpine raw humus soil, 1958, Gams (CBS No. 824.70).

(=) *Cordyceps subsessilis* Petch in *Trans. Brit. Mycol. Soc.* 21: 39. 25 Oct 1937, nom. rej. prop.

Lectotypus (fide Hodge & al. in *Mycologia* 88: 715. 1996): U.S.A., Tennessee, Burbank, on coleopterous larvae, Aug 1896, ex Herb. Thaxter No. 6145 (FH).

Tolypocladium inflatum W. Gams is a pharmaceutically important fungus because it is the source of cyclosporin, the immunosuppressant drug that allows successful organ transplants (Groen in *Proc. Staff Meetings Mayo Clin.* 64: 680. 1989; Di Salvo & al. in *Arch. Biochem. Biophys.* 55: 529. 2013). The relationship of this asexual fungus to a sexual morph *Cordyceps subsessilis* Petch was proven by Hodge

& al. (in *Mycologia* 88: 715–719. 1996) and confirmed with sequence data by Stensrud & al. (in *Mycol. Res.* 109: 41–56. 2005). The name *Pachybasium niveum* O. Rostr. (in *Dansk Bot. Ark.* 2(5): 41. 1916) has already been rejected outright under Art. 56 (cf. App. V of the *ICN*, Wiersma & al. in *Regnum Veg.* 157. 2015), as proposed by Dreyfuss & Gams (in *Taxon* 43: 660. 1994) and recommended by the Committee for Fungi as reported by Gams (in *Taxon* 45: 309. 1996), in order to retain usage of the name *T. inflatum*. The arguments for preserving usage of *T. inflatum* over *P. niveum* as stated in the Dreyfuss & Gams proposal also apply in this proposal. The name *T. inflatum* (GSS = 3340 results) continues to be used in the pharmaceutical and mycological literature and a genome has been sequenced and published under this name (Bushley & al. in *PLOS Genetics* 9(6): e1003496. 2013, <https://doi.org/10.1371/journal.pgen.1003496>), while *C. subsessilis* (GSS = 78 results) is relatively obscure. Quandt & al. (in *IMA Fungus* 5: 121. 2014), while studying the *Ophiocordycipitaceae* (*Hypocreales*), recommended the use of the generic name *Tolypocladium* W. Gams (l.c. 1971) over the competing generic names *Elaphocordyceps* G.H. Sung & Spatafora (in *Stud. Mycol.* 57: 36. 2007) and *Chaunopycnis* W. Gams (in *Persoonia* 11: 75. 1979). The generic name *Cordyceps* Fr. (in *Observ. Mycol.* 2: 316 (cancellans). 1818) does not compete with *Tolypocladium*. Rather than place the older epithet of *C. subsessilis* in *Tolypocladium*, we propose the conservation of the well-known name *T. inflatum*.

The holotype of *Tolypocladium inflatum* was designated by Gams (l.c. 1971: 186) as CBS No. 824.70. This culture has been maintained in a metabolically inactive state and can thus serve as type material. When describing *Cordyceps subsessilis*, Petch (in *Trans. Brit. Mycol. Soc.* 21: 39. 1937) referred to two specimens at FH, one of which was listed as the type by Hodge & al. (l.c.) and is thus the lectotype, while the other specimen is from a different locality (U.S.A., North Carolina, Cranberry, on coleopterous larvae, 1887, ex Herb. Thaxter No. 6155) and is a paratype.

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