

THE ASCOMYCETE GENUS *SORDARIA*

J. GUARRO* & J. A. VON ARX**

Sordaria is restricted to coprophilous, soil-, or seed-borne Pyrenomycetes with aseptate, elongate ascospores with a gelatinous, amorphous sheath. The genus is redescribed and a key to fourteen accepted species is given. A checklist of all taxa described as *Sordaria* is added.

In the course of a revision of cultures of *Sordaria* species maintained in the CBS Culture Collection, a checklist of all *Sordaria* species was compiled. The genus *Sordaria* is restricted to species with ostiolate ascomata, cylindrical asci and aseptate, elongate, cylindrical, ellipsoidal, or fusiform ascospores with a distinct gelatinous sheath. Species with ovate, broadly fusiform, or nearly spherical ascospores without sheath are classified in a separate genus *Asordaria* (von Arx & al., 1987).

Treatments on *Sordaria* have been published by Bayer (1924) for Central Europe, Cain (1934) for Ontario, Canada, Moreau (1953) for Europe, Boedijn (1962) for Indonesia, Cailleux (1972) for central parts of Africa, Lundqvist (1972) for nordic regions and by Barrasa & al. (1986) for Spain.

In this paper a new description of *Sordaria* sensu stricto is given, followed by a key to fourteen accepted species and a list of all species that have been referred to *Sordaria*.

S O R D A R I A Ces. & De Not.

Sordaria Ces. & De Not. in Comm. Soc. Crit. Ital. 1: 226. 1863. — Type species (lectotype): *S. fimicola* (Rob.) Ces. & De Not.

For synonyms see Lundqvist (1972).

Colonies expanding, dark, often with a pale or brown aerial mycelium, reverse brown or black; ascomata superficial, often embedded in the aerial mycelium, obovate, pyriform, or ampulliform, with a conical or cylindrical ostiolar beak; ascomatal wall pigmented, brown or nearly black, composed of 3–5 layers of rather large, slightly flattened cells, textura angularis in surface view, smooth or covered with pigmented hyphal appendages; asci cylindrical, with a short stalk, unitunicate, at the truncate apex with distinct, non amyloid, often ring-like thickenings, 8-spored; ascospores uniseriate, ellipsoidal, cylindrical, or fusiform with rounded ends, aseptate, brown or opaque when mature, with a distinct, often protuberant germ pore at base, with an amorphous, hyaline gelatinous sheath surrounding the spore except for the basal, porate part.

Coprophilous, soil- or seed-borne or isolated from plant debris.

Homothallic or heterothallic.

* Dept. of Biology, Fac. of Medicine, University of Barcelona, Reus, Spain.

** Centraalbureau voor Schimmelcultures, Baarn, The Netherlands.

S. anomala (Griff.) Sacc. & D. Sacc. in Syll. Fung. 17: 603. 1905 = *Podospora anomala* (Griff.) Cain (Mirza & Cain, 1969).

S. anserina Wint. (Winter, 1873: 100) = *Podospora anserina* Niessl.

S. apiculifera Speg. in An. Mus. nac. Hist. nat. B. Aires 6: 251. 1899 = *Podospora apiculifera* (Speg.) Mirza & Cain (Mirza & Cain, 1969) or = *P. australis* (Speg.) Niessl (Lundqvist, 1972).

S. appendiculata Auersw. in Niessl in Verh. naturf. Ver. Brünn 10: 188. 1872 = *Podospora appendiculata* Auersw. ex Niessl (Mirza & Cain, 1969).

S. arachnoidea (Niessl) Sacc. & Syd. in Syll. Fung. 14: 492. 1899 = *Cercophora coprophila* (Fr.) Lundq. (Lundqvist, 1972).

S. araneosa Cain in Univ. Toronto Stud. (Biol. Ser.) 38: 52. 1934 = *Podospora araneosa* (Cain) Cain.

S. arctica Cain in Can. J. Bot. 35: 262. 1957 = *Asordaria arctica* (Cain) v. Arx & Guarro.

S. arenicola Grove in J. Bot. 66. 1930. — The type could not be studied.

S. argentina Speg. in An. Soc. ci. argent. 10: 16. 1880 = *S. fimicola* (Lundqvist, 1972).

S. argentinensis Speg. in An. Mus. nac. B. Aires 23: 49. 1912 = *Podospora argentinensis* (Speg.) Mirza & Cain (Mirza & Cain, 1969).

S. arizonensis (Griff.) Sacc. in Syll. Fung. 17: 601. 1905 = *Arnium arizonense* Lundq. & Krug (Lundqvist, 1972).

S. australis (Speg.) Sacc., Syll. Fung. 1: 239. 1882 = *Podospora australis* (Speg.) Niessl (Mirza & Cain, 1969).

S. austro-americana (Speg.) Sacc., Syll. Fung. 1: 237. 1882 = *Podospora austro-americana* (Speg.) Mirza & Cain (Mirza & Cain, 1969).

S. baltica Lundq. in Symb. bot. upsal. 20: 238. 1972.

S. barbata E. C. Hans. in Vid. Meddr dansk naturh. Foren. 1876: 21. 1877 = *Arnium macrotheca* (Crouan) Lundq. (Lundqvist, 1972).

S. bicurvata Rick in Broteria 2: 135. 1933.

S. bisporula (Crouan) Cooke & Plowr. in Grevillea 7: 86. 1879 = *Trichodelitschia bisporula* (Crouan) Lundq. (Lundqvist, 1964a).

S. bolbitoni (Quél.) Wint. in Rabenh. Kryptog.-Fl. (2. Aufl.) 1, Pilze 2: 169. 1885. — This is a doubtful species (Bayer, 1924).

S. bombardioides Auersw. ex Niessl in Verh. naturf. Ver. Brünn 10: 187. 1871 = *Bombardioidea bombardioides* (Auersw. ex Niessl) C. Moreau.

S. bosensis Das in Trans. Br. mycol. Soc. 45: 547. 1962 = *Areolospora bosensis* (Das) Hawksw. (Hawksworth, 1980).

S. botryosa Penz. & Sacc., Icon. Fung. Javan.: 9. 1904 = *Bombardia bombarda* (Batsch) J. Schroet. (Moreau, 1953).

S. bovilla (Cooke) Cooke in Grevillea 16: 55. 1887 = *Cercophora coprophila* (Fr.) Lundq. (Lundqvist, 1972).

S. brassicae (Kl.) Crouan, Fl. Finistère: 22. 1867 = *Arnium olerum* (Fr.) Lundq. & Krug apud Lundq. (Lundqvist, 1972).

S. brefeldii Zopf in Z. Naturw. 56: 539. 1883 = *Hypocopra brefeldii* (Zopf) Chen.

S. brevicaudata Speg. in An. Mus. nac. B. Aires 6: 252. 1899. — This is a nomen dubium (Lundqvist, 1972).

S. brevicollis Olive & Fantini in Am. J. Bot. 48: 124. 1961. — This species is a heterothallic relative of *S. fimicola*.

S. breviseta P. Karst. in Bidr. Känn. Finl. Nat. Folk 23: 52. 1873 = *Podospora appendiculata* (Auersw.) Niessl (Mirza & Cain, 1969) or = *P. pauciseta* (Ces.) Trav. (Lundqvist, 1972).

S. burkillii Mass. in Bull. misc. Inf. R. bot. Gdns Kew 1913: 105. 1913. — This is probably identical with *P. appendiculata* (Moreau, 1953).

S. byssiseda Petch in Ann. R. bot. Gdns Peradeniya 7: 302. 1922 = *Podospora* species (according to the description).

S. caerulea Petch in Ceylon J. Sci. (Bot.) 9: 319. 1915. — Probably a *Cercophora* species (Cain, 1934).

S. californica Plowr. in Grevillea 7: 72. 1878 = *Cercophora californica* (Plowr.) Lundq. (Lundqvist, 1972).

S. capturae Speg. in An. Soc. ci. argent. 9: 21. 1880. — Moreau (1953) considers this species to be a synonym of *S. papyricola*, but according to Lundqvist (1972) it is a good species.

S. carbonaria (Phill. & Plowr.) Sacc., Syll. Fung. 1: 233. 1882 = *Zopfiella carbonaria* (Phill. & Plowr.) v. Arx.

S. caricicola Ell. & Ev. in herb. = *S. fimicola* (Lundqvist, 1972).

S. caudata (Curr.) Sacc., Syll. Fung. 1: 236. 1882 = *Cercophora caudata* (Curr.) Lundq. (Hilber & Hilber, 1979).

S. caulicola Ces. in Atti R. Accad. Sci. Fis. Matem. 8(3): 23. 1879 = *Anthostomella caulicola* (Ces.) Sacc. (Moreau, 1953).

S. cervina Cain in Univ. Toronto Stud. (Biol. Ser.) 38: 36. 1934 = *P. cervina* Cain (Mirza & Cain, 1969).

S. cirrifera Speg. in An. Mus. nac. B. Aires 6: 253. 1899 = *Arnium cirrifera* (Speg.) Krug & Cain (Krug & Cain, 1972).

S. cirsii Crouan, Fl. Finistère: 22. 1867. — The type was not available for study.

S. citrina Petch in Ann. R. bot. Gdns Peradeniya 7: 301. 1922 = *Podospora* species (according to the description).

S. cladoniae Anzi in Atti Soc. ital. Sci. nat. 11: 179. 1868 = *Adelococcus cladoniae* (Anzi) Keissl. (Hawksworth, 1978).

S. clavariae Ces. & De Not. in Comm. Soc. critt. ital. 1: 226. 1863 = *Helminthosphaeria clavariae* (Tul.) Fuckel (von Arx & Müller, 1954).

S. clavata Pat. apud Pat. & Lagerh. in Bull. Soc. mycol. Fr. 11: 226. 1895. The description is not adequate, and the fungus has been excluded from *Sordaria* by Moreau (1953).

S. clypeata De Not., Sphaerici italici 1: 22. 1863 = *Entosordaria clypeata* (De Not.) v. Arx & Müller (von Arx & Müller, 1954).

S. comata (Kirschst.) Bayer (Bayer, 1924: 71). — This is a doubtful species. It may represent a *Podospora* species (according to the description).

S. communis (Speg.) Sacc., Syll. Fung. 1: 231. 1882 = *Podospora communis* (Speg.) Sacc. (Mirza & Cain, 1969).

S. communis var. *brachyura* = *Podospora communis* (Speg.) Sacc. (Mirza & Cain, 1969).

S. communis var. *macrura* = *Podospora decipiens* (Winter) Niessl (Mirza & Cain, 1969).

S. communis var. *tetraspora* = *Podospora anserina* (Ces. in Rab.) Niessl (Mirza & Cain, 1969).

S. conoidea Cailleux in Bull. Soc. mycol. Fr. 87: 620. 1971 = *Asordaria conoidea* (Cailleux) v. Arx & Guarro.

S. consanguinea Ces. in Rab. F. eur. extraeur., Cent. XXVII; in Hedwigia 21: 10. — This is a doubtful species (Bayer, 1924).

S. coprophila (Fr.) Ces. & De Not. in Comm. Soc. critt. ital. 1: 226. 1863 = *Cercophora coprophila* (Fr.) Lundq. (Lundqvist, 1972).

S. coronifera Grove in J. Bot. 44: 185. 1916 = *Podospora aloides* (Grove) Mirza & Cain (Mirza & Cain, 1969).

S. culmigena Sacc. & Speg. in Michelia 1: 273. 1877 = *Arnium olerum* (Fr.) Lundq. & Krug (Moreau, 1953).

S. curreyi Auersw. ex Niessl in Verh. naturf. Ver. Brünn 10: 192. 1872 = *Arnium olerum* (Fr.) Lundq. & Krug (Moreau, 1953).

S. curvicolla Wint. in Hedwigia 10: 161. 1871 = *Podospora curvicolla* (Wint.) Niessl (Mirza & Cain, 1969).

S. curvispora Cain in Can. J. Res. (Ser. C) 26: 492. 1948 = *Podospora curvispora* (Cain) Cain (Mirza & Cain, 1969).

S. curvula de Bary, Morphol. Physiol. Pilze: 209. 1866 = *Podospora curvula* (de Bary) Niessl.

S. curvula var. *coronata* = *Podospora curvula* (de Bary) Niessl (Mirza & Cain, 1969) = *Schizothecium conicum* (Fuckel) Lundq. (Lundqvist, 1972).

S. curvula var. *coronifera* = *Podospora aloides* (Fuckel) Mirza & Cain (Mirza & Cain, 1969).

S. curvula var. *tetraspora* = *Schizothecium conicum* (Fuckel) Lundq. (Lundqvist, 1972).

S. decipiens Wint. ex Fuckel in Jb. Nassau Ver. Naturk. 27-28: 44. 1873 = *Podospora decipiens* (Wint. ex Fuckel) Niessl (Mirza & Cain, 1969).

S. delitschioides Speg. in An. Mus. nac. B. Aires 6: 254. 1899 = *Cercophora sordarioides* (Speg.) Lundq. (Lundqvist, 1972).

S. destruens (Shear) Hawk. in Trans. Br. mycol. Soc. 34: 174. 1951. — This includes non-coprophilous relatives of *S. fimicola*.

S. discospora Auersw. ex Niessl in Verh. naturf. Ver. Brünn 10: 192. 1872 = *Coniochaeta discospora* (Auersw.) Cain (Cain, 1934).

S. discospora var. *major* Wint. (Winter, 1873: 20) = *Coniochaeta scatigena* (Berk. & Broome) Cain (Cain, 1934).

S. dubia E. C. Hans. in Vid. Meddr dansk naturh. Foren. 1876: 337. 1877 = *Podospora dubia* (E. C. Hans.) Cain (Cain, 1962) or *Schizothecium dubium* (Hans.) Lundq. (Lundqvist, 1972).

S. elephantina P. Henn. in Bot. Jb. (ed. Engler) 22: 77. 1895 = *Cercophora coprophila* (Fr.) Lundq. (Moreau, 1953).

S. ellisiana (Griff.) Sacc. in Syll. Fung. 17: 601. 1905 = *Podospora ellisiana* (Griff.) Mirza & Cain (Mirza & Cain, 1969).

S. elongatispora Barrasa & al. in Persoonia 13: 86. 1986.

S. eminens Cain in Univ. Toronto Stud. (Biol. Ser.) 38: 51. 1934 = *Podospora eminens* Cain (Mirza & Cain, 1969).

S. equina (Fr.) Cooke in Grevillea 17: 78. 1887 = *Podospora fimiseda* (Fuckel) Niessl.

S. equina (Berk. & Rav.) Mirza & Cain apud Udagawa & Horie (Kobayashi, 1971: 524). — From the description given in Kobayashi (1971), the fungus represents a relative of *S. fimicola* with ascospores showing a thin gelatinous sheath.

S. equorum (Fuckel) Wint. (Winter, 1873: 77) = *Hypocopra equorum* (Fuckel) Wint. (Bayer, 1924).

S. erecta (Speg.) Sacc., Syll. Fung. 1: 239. 1882 = *Podospora anserina* (Ces. in Rab.) Niessl (Mirza & Cain, 1969) = *Podospora pauciseta* (Ces.) Trav. (Lundqvist, 1972).

S. erostrata (Griff.) Sacc. in Syll. Fung. 17: 604. 1905 = *Zopfiella erostrata* (Griff.) Udagawa & Furuya (Udagawa & Furuya, 1974).

S. fermenti (Fuckel) Wint. (Winter, 1873: 85) = *S. humana* (Moreau, 1953).

S. fimbriata Bayer (Bayer, 1924: 29) = *Podospora fimbriata* (Bayer) Cain (Mirza & Cain, 1969).

S. fimeti (Pers.) Wint. (Winter, 1873: 78) = *Hypocopra fimeti* (Pers.) Fr. (Bayer, 1924).

S. fimicola (Rob.) Ces. & De Not. in Comm. Soc. critt. ital. 1: 226. 1863.

S. fimiseda Ces. & De Not. in Comm. Soc. critt. ital. 1: 226. 1863 = *Podospora fimicola* Ces. (Mirza & Cain, 1969).

S. friesii Niessl in Verh. naturf. Ver. Brünn 3: 112. 1864 = *Coniochaeta pulveracea* (Ehrh.) Munk (von Arx & Müller, 1954).

S. gliardi De Not., Spher. ital. 21: 23. 1863. — This is a doubtful species.

S. garhwalensis Srivastava & Bhist. in Indian Phytopath. 36: 383. 1983. — The type was not available for study.

S. gigaspora Fuckel in Jb. nassau. Ver. Naturk. 29-30: 26. 1875. — A type is not available and the description is inadequate for recognition of the fungus.

S. globosa Mass. & Salm. in Ann. Bot. 15: 334. 1901 = *Podospora globosa* (Mass. & Salm.) Cain (Cain, 1962).

S. glutinans Cain in Univ. Toronto Stud. (Biol. Ser.) 38: 40. 1934 = *Podospora glutinans* (Cain) Cain (Mirza & Cain, 1969).

S. goundaensis Cailleux in Bull. Soc. mycol. Fr. 87: 620. 1971 = *Asordaria goundaensis* (Cailleux) v. Arx & Guarro.

S. grisea Ces. in Atti R. Accad. Sci. Fis. Matem. 8(3): 22. 1879. — This is a doubtful species and was excluded from *Sordaria* by Moreau (1953).

S. hansenii Oud. in Hedwigia 21: 123. 1882 = *Coniochaeta hansenii* (Oud.) Cain (Cain, 1934).

S. heterothallis Fields & Maniotis in Am. J. Bot. 50: 80. 1963. — This is a heterothallic relative of *S. macrospora*.

S. hippica (Berk. & Rav.) Ellis & Ev., N. Am. Pyrenom.: 127. 1892 = *S. equina* (Berk. & Rav.) Mirza & Cain apud Udagawa & Horie (Kobayashi, 1971).

S. hippica (Sacc.) Cooke in Grevillea 16: 55. 1887 = *S. fimicola* (Lundqvist, 1972).

S. hirsuta (Dang.) Sacc. & Trav. in Syll. Fung. 20: 807. 1911 = *Podospora hirsuta* Dang. (Mirza & Cain, 1969).

S. hirta E. C. Hans. in Vid. Meddr dansk naturh. Foren. 1876: 336. 1877 = *Arnium hirtum* (E. C. Hans.) Lundq. & Krug (Lundqvist, 1972).

S. hispidula Speg. in An. Mus. nac. B. Aires 6: 255. 1899 = *Podospora curvula* (de Bary) Niessl (Mirza & Cain, 1969) = *Podospora pseudominuta* Speg. (Mirza & Cain, 1969).

S. humana (Fuckel) Wint. in Bot. Ztg 30: 835. 1872 = *Asordaria humana* (Fuckel) v. Arx & Guarro.

S. hyalina Griff. in Mem. Torrey bot. Club 11: 48. 1901 = *Phomatospora hyalina* (Griff.) Cain (Cain, 1934) = *Phomatospora minutissima* (Crouan) Lundq. (Lundqvist, 1972).

S. hyalopilosa (Stratton) Cain in Univ. Toronto Stud. (Biol. Ser.) 38: 45. 1934 = *Podospora hyalopilosa* (Stratton) Cain (Mirza & Cain, 1969).

S. hydrophila (Kirschst.) Sacc. in Syll. Fung. 24: 845. 1928 = *Cercophora hydrophila* (Kirschst.) Lundq. (Lundqvist, 1972).

S. hypocoproides Speg. in Boln Acad. Ci. Córdoba 11: 189. 1887 = *Hypocopra hypocoproides* (Speg.) Krug & Cain (Krug & Cain, 1974b).

S. inaequalis Cain in Can. J. Res. (Ser. C.) 26: 489. 1948 = *Podospora inaequalis* (Cain) Cain (Mirza & Cain, 1969).

S. inaequalilateralis Cain in Univ. Toronto Stud. (Biol. Ser.) 38: 29. 1934 = *Arnium inaequalilateralis* (Cain) Lundq. & Krug (Lundqvist, 1972).

S. indica Srivastava & Tandon in Curr. Sci. 34: 354. 1966 = *Achaetomium globosum* Rai & Tewari (according to the description).

S. insignis E. C. Hans. in Vid. Meddr dansk naturh. Foren. 1876: 336. 1877 = *Strattonia insignis* (E. C. Hans.) Lundq. (Lundqvist, 1972).

S. iowana Ell. & Holw. in J. Mycol. 4: 65. 1888 = *S. fimicola* (Moreau, 1953).

S. kansensis (Griff.) Sacc. & D. Sacc. in Syll. Fung. 17: 602. 1905 = *Arnium kansense* (Griff.) Krug & Cain (Krug & Cain, 1971).

S. kilimandscharica A. Schm. in Jber. schles. Ges. vaterl. Kult.: 22. 1912 = *Podospora kilimandscharica* (A. Schm.) Cain (Cain, 1962).

S. lanuginosa (Preuss) Sacc., Fungi Veneti Ser. 6: 26. 1877 = *Arnium olerum* (Fr.) Lundq. & Krug (Lundqvist, 1972).

S. lanuginosa (Zopf) A. Schm. Verbreit. coproph. Pilze Schles.: 21. 1912 = *Strattonia zopfii* Lundq. (Lundqvist, 1972).

S. lappa e Potebnia in Annls Mycol. 5: 13. 1907.

S. leporina Cain in Univ. Toronto Stud. (Biol. Ser.) 38: 30. 1934 = *Arnium leporinum* (Cain) Lundq. & Krug.

S. leucoplaca (Berk. & Rav.) Ell. & Ev., N. Am. Pyrenom.: 127. 1892 = *Coniochaeta leucoplaca* (Berk. & Rav.) Cain (Cain, 1934).

S. leucotricha Speg. in *Michelia* 1: 225. 1878 = *Zopfiella leucotricha* (Speg.) Malloch & Cain (Malloch & Cain, 1971).

S. lignicola Fuckel in *Jb. nassau. Ver. Naturk.* 25-26: 38. 1871 = *Cercophora caudata* (Curr.) Lundq. (Lundqvist, 1972).

S. linguiformis Cain in Univ. Toronto Stud. (Biol. Ser.) 38: 42. 1934 = *Podospora linguiformis* (Cain) Cain (Mirza & Cain, 1969) = *Schizothecium dubium* (Hans.) Lundq. (Lundqvist, 1972).

S. longicaudata (Griff.) Sacc. in *Syll. Fung.* 18: 601. 1905 = *Podospora longicaudata* (Griff.) Cain (Mirza & Cain, 1969).

S. longispora Batista & Pontual in *Bol. Agr., Pernambuco* 15: 39. 1948 = *Podospora appendiculata* (Auersw.) Niessl (Mirza & Cain, 1969).

S. lugubris Ces. & De Not. *Comment. Soc. critt. ital.* 1: 52. 1863 = *Anthostomella lugubris* (Rob. & Desm.) Sacc. (Moreau, 1953).

S. lutea Ell. & Ev. in *J. Mycol.* 3: 118. 1887 = *Cercophora lanuginosa* (Crouan) Lundq. (Lundqvist, 1972).

S. mabokensis Cailleux in *Bull. Soc. mycol. Fr.* 87: 620. 1971 = *Asordaria mabokensis* (Cailleux) v. Arx & Guarro.

S. macrospora Auersw. in *Hedwigia* 5: 192. 1866.

S. macrostoma Speg. in *An. Mus. nac. B. Aires* 6: 252. 1899 = *Podospora communis* (Speg.) Niessl (Mirza & Cain, 1969).

S. macrotheca (Crouan) Cooke in *Grevillea* 16: 55. 1887 = *Arnium macrotheca* (Crouan) Lundq. (Lundqvist, 1972).

S. macrura (Bayer, 1924: 71) = *Podospora australis* (Speg.) Niessl (Mirza & Cain, 1969).

S. malacotricha Auersw. ex Niessl in *Verh. naturf. Ver. Brünn* 10: 188. 1872 = *Coniochaeta malacotricha* (Auersw. ex Niessl) Trav.

S. maxima Niessl in *Rab., Fungi Eur. exs.* 1340. 1866 = *Bombardioidea stercoris* (DC.) Lundq. (Lundqvist, 1972).

S. merdaria (Fr.) Auersw. ex Wint. (*Winter*, 1873: 13) = *Hypocopra merdaria* Fries (Bayer, 1924).

S. microscopica De Not. in *Comm. Soc. critt. ital.* 2: 480. 1867 = *Rosellinia microscopica* (De Not.) Sacc. (Moreau, 1953).

S. microspora Ces. in *Atti R. Accad. Sci. Fis. Matem.* 8(3): 22. 1879 = *Rosellinia microspora* (Ces.) Sacc. (Moreau, 1953).

S. microspora Plowr. in *Grevillea* 6: 28. 1877 = *Coniochaeta leucoplaca* (Berk. & Rav.) Cain (Cain, 1934).

S. micrura (Speg.) Sacc., *Syll. Fung.* 1: 234. 1882 = *Podospora curvula* (de Bary) Niessl (Mirza & Cain, 1969).

S. millespora (A. Schm.) Cain in Univ. Toronto Stud. (Biol. Ser.) 38: 52. 1934 = *Podospora millespora* (Schmidt) Cain (Cain, 1962).

S. minima Sacc. & Speg. in *Michelia* 1: 373. 1878. — This is a doubtful species; Moreau (1953) excluded it from *Sordaria*; it probably is a species of *Coniochaeta*.

S. minor (Ell. & Ev.) Sacc. & Syd. in *Syll. Fung.* 14: 493. 1988 = *Podospora minor* Ell. & Ev. (Mirza & Cain, 1969).

S. minuta Fuckel in *Jb. Nassau. Ver. Naturk.* 27-28: 44. 1873 = *Podospora vesticola* (Berk. & Br.) Mirza & Cain (Mirza & Cain, 1969).

S. minutella Cooke & Plowr. in *Grevillea* 7: 86. 1874 = *Trichodelitschia bisporula* (Crouan) Lundq. (Lundqvist, 1964a).

S. moravica (Niessl) Cooke in *Grevillea* 16: 56. 1887 = *Trichodelitschia bisporula* (Crouan) Lundq. (Lundqvist, 1964a).

S. multicaudata (Griff.) Sacc. in *Syll. Fung.* 17: 603. 1905 = *Arnium macrotheca* (Crouan) Lundq. (Lundqvist, 1972).

S. musae (Maire) Sacc. in *Syll. Fung.* 24: 847. 1928 = *Cercophora* spec. (according to the description).

S. myriaspora Crouan, *Fl. Finistère*: 22. 1867 = *Podospora myriaspora* (Crouan) Niessl (Lundqvist, 1972).

S. natalitia (Speg.) Sacc., *Syll. Fung.* 1: 231. 1882. — This is a doubtful species and was excluded from *Sordaria* by Moreau (1953).

S. neglecta E. C. Hans. in *Vid. Meddr dansk naturh. Foren.* 1876: 335. 1877 = *Arnium olerum* (Fr.) Lundq. & Krug (Lundqvist, 1972).

S. oblectans Ces. in *Atti R. Accad. Sci. Fis. Matem.* 8(3): 23. 1879 = *Rosellinia oblectans* (Ces.) Cooke (Moreau, 1953).

S. obliquata Ces. & De Not. in *Comm. Soc. critt. ital.* 1: 52. 1863 = *Rosellinia obliquata* (Somm.) Sacc. (Moreau, 1953).

S. occidentalis Batista & Pontual in *Bol. Agr., Pernambuco* 15: 38. 1948 = *Podospora communis* (Speg.) Niessl (Mirza & Cain, 1969).

S. ontariensis Cain in Univ. Toronto Stud. (Biol. Ser.) 38: 31. 1934 = *Arnium ontariense* (Cain) Krug & Cain (Krug & Cain, 1971).

S. oryzae Hara, *Diseases of the riceplant*: 132. 1918. — The type was not available and the description is not adequate for recognition of the fungus.

S. oryzei Sacc. in *N. Gior. bot. ital.* 23: 201. 1916. — This is a doubtful species and has been excluded from *Sordaria* by Moreau (1953).

S. oryzina Hara, *Diseases of the riceplant*: 133. 1918. — The type was not available and the description is inadequate for recognition of the fungus.

S. ostiolata Ell. & Ev. in *Bull. Torrey bot. Club* 24: 458. 1897 = *S. fimicola* (Moreau, 1953).

S. pachydermatica Ces. in *Atti R. Accad. Sci. Fis. Matem.* 8(3): 22. 1879. Moreau (1953) includes this species in *Rosellinia* or *Coniochaeta*.

S. pachyspora Mout. in *Bull. Soc. r. Bot. Belg.* 39: 38. 1900. — This name has been excluded from *Sordaria* by Moreau (1953).

S. palmicola Auersw., Un. itin. Crypt., No. 58. 1866 = *Anthostomella palmicola* (Auersw.) Rab. (Pirozynski, 1972).

S. papillata Urries in Boln Soc. esp. Hist. nat. 32: 213. 1932.

S. papillosa Bayer (Bayer, 1924: 51) = *Sordaria humana* (Moreau, 1953).

S. papyricola Wint. (Winter, 1873: 18). — This is a nomen dubium (Lundqvist, 1972).

S. penicillata Ell. & Ev. in J. Mycol. 4: 78. 1888 = *Podospora pauciseta* (Ces.) Trav. (Lundqvist, 1972).

S. perfidiosa De Not. in Comm. Soc. critt. ital. 2: 481. 1867 = *Entosordaria perfidiosa* (De Not.) Hoehnel (von Arx & Müller, 1954).

S. perileuca Sacc. in Atti Accad. sci. ven.-trent.-istr. 10: 66. 1917 = *Cercophora sara-wacensis* (Ces.) Lundq. (Lundqvist, 1972).

S. perplexans Cain in Univ. Toronto Stud. (Biol. Ser.) 38: 50. 1934 = *Podospora perplexans* (Cain) Cain (Cain, 1962).

S. philocoproides Griff. in Mem. Torrey bot. Club 11: 54. 1901 = *Coniochaeta philocoproides* (Griff.) Cain (Cain, 1934).

S. phyllogena (Sacc.) Niessl in Hedwigia 22: 155. 1883 = *S. humana*.

S. pilifera Bayer (Bayer, 1924: 62). — The type was not available. Probably a species with small ascospores ($10.5 \times 7 \mu\text{m}$) was studied.

S. pilosa Mout. in Bull. Soc. r. Bot. Belg. 25: 144. 1886 = *Podospora pilosa* (Mout.) Cain (Mirza & Cain, 1969) = *Cercophora elephantina* (P. Henn.) Lundq. (Lundqvist, 1972).

S. pilosa Petch in Ann. R. bot. Gdns Peradeniya 7: 302. 1922 = *Podospora* species (according to the description).

S. platyspora Plowr. in Grevillea 6: 28. 1877 = *Coniochaeta scatigena* (Berk. & Br.) Cain (Cain, 1962).

S. pleiospora Wint. in Hedwigia 10: 161. 1871 = *Podospora pleiospora* (Wint.) Niessl (Mirza & Cain, 1969).

S. polyspora Phill. & Plowr. in Grevillea 10: 73. 1881 = *Coniochaeta* sp. (Cain, 1934).

S. potentillae Gucewiz, Plant. non vasc.: 218. 1967. — The description and illustrations are incomplete. Probably a species of *Asordaria* with small ascospores ($14-15 \times 8.5-10 \mu\text{m}$) was studied.

S. prolifica Cailleux in Bull. Soc. mycol. Fr. 87: 620. 1971 = *Asordaria prolifica* (Cailleux) v. Arx & Guarro.

S. pseudominuta Speg. in Boln Acad. Ci. Córdoba 11: 57. 1887 = *Podospora curvula* (de Bary) Niessl (Mirza & Cain, 1969).

S. pumila Bayer (Bayer, 1924: 49). — The type was not available for study. The species is characterized by very small ascospores ($8-9 \times 5-7 \mu\text{m}$).

S. puntiformis Ces. in Atti R. Accad. Sci. Fis. Matem. 8(3): 23. 1879. — This is a doubtful species. Moreau (1953) excluded it from *Sordaria*.

S. pyriformis Bayer (Bayer, 1924: 113) = *Podospora pyriformis* (Bayer) Cain (Mirza & Cain, 1969).

S. rabenhorstii Niessl in Rab., Fungi eur. 1528. 1872 = *Fimetariella rabenhorstii* (Niessl) Lundq. (Lundqvist, 1946b).

S. rhynchophora De Not. in Comm. critt. ital. 2: 480. 1867 = *Ceratostoma notarisii* Sacc. (Moreau, 1953).

S. rotula (Cooke) Niessl in Hedwigia 22: 155. 1883 = *Apiosordaria rotula* (Cooke) v. Arx.

S. sarawacensis Ces. in Atti R. Accad. Sci. Fis. Matem. 8(3): 22. 1879. — This is a doubtful species.

S. sclerogenia Fields & Gear. in Mycologia 58: 524. 1966. — This is a heterothallic relative of *S. fimicola* with a spermatial state.

S. seminuda Griff. in Mem. Torrey bot. Club 11: 50. 1901 = *Podospora seminuda* (Griff.) Mirza & Cain (Mirza & Cain, 1969).

S. septospora Cain in Univ. Toronto Stud. (Biol. Ser.) 38: 24. 1934. — The type could not be examined.

S. serignanensis (Fabre) Cooke in Grevillea 16: 55. 1887 = *Bombardioidea serignanensis* (Fabre) Lundq.

S. setosa Wint. (Winter, 1873: 97) = *Podospora setosa* (Wint.) Niessl (Mirza & Cain, 1969).

S. sicutii Cailleux in Bull. Soc. mycol. Fr. 87: 620. 1971 = *Asordaria sicutii* (Cailleux) v. Arx & Guarro.

S. similis E. C. Hans. in Vid. Meddr dansk Naturh. Foren 1876: 336. 1877 = *Podospora similis* (E. C. Hans.) Niessl (Mirza & Cain, 1969).

S. socia De Not. in Comm. Soc. critt. ital. 2: 480. 1867 = *Rosellinia socia* (De Not.) Sacc. (Moreau, 1953).

S. sordarioides (Speg.) Cooke in Grevillea 16: 56. 1887 = *Cercophora sordarioides* (Speg.) Lundq. (Lundqvist, 1972).

S. sphaerospora Ell. & Ev., N. Am. Pyrenom.: 128. 1892 = *Asordaria humana* (Moreau, 1953).

S. squamulosa Crouan, Fl. Finistère: 22. 1867 = *Schizothecium squamulosum* (Crouan) Lundq.

S. stercoraria (Sow.) Oud., Rév. Champ. Pays Bas: 159. 1897 = *Hypocopra stercoraria* (Sow.) Fuckel.

S. striata Ell. & Ev. in J. Mycol. 4: 67. 1888 = *Cercophora striata* (Ell. & Ev.) Lundq. (Lundqvist, 1972).

S. superba De Not. in Comm. Soc. crit. ital. 2: 479. 1867.

S. superior (Griff.) Sacc. & D. Sacc. in Syll. Fung. 17: 603. 1905 = *Podospora appendiculata* (Auersw.) Niessl (Mirza & Cain, 1969).

S. sylvatica Daszewska in Bull. Soc. bot. Genève 4: 294. 1912 = *S. fimicola* (Moreau, 1953).

S. taediosa Speg. in An. Mus. nac. B. Aires 6: 255. 1899. — This is a nomen dubium (Lundqvist, 1972).

S. taenioides (Griff.) Sacc. & D. Sacc. in Syll. Fung. 17: 602. 1905 = *Podospora australis* (Speg.) Niessl (Mirza & Cain, 1969).

S. tetraspora Wint. in Hedwigia 10: 161. 1871 = *Podospora tetraspora* (Wint.) Cain (Mirza & Cain, 1969).

S. texanica (Rehm) Doguet in *Botaniste* 39: 222. 1955. — The type could not be examined.

S. thermophila Fields in *Mycologia* 60: 1117. 1968. — This is a heterothallic relative of *S. fimicola* with thermophilic requirements.

S. tjobodiana Penz. & Sacc. in *Malpighia* 11: 395. 1897. — The type could not be examined. Moreau (1953) excluded the species from *Sordaria*.

S. tomento-alba Cailleux in *Bull. Soc. mycol. Fr.* 87: 620. 1971. — This species is a heterothallic relative of *S. fimicola*.

S. tomentosa (Speg.) Sacc., *Syll. Fung.* 1: 236. 1882 = *Arnium tomentosum* (Speg.) Lundq. & Krug (Lundqvist, 1972).

S. ustorum Mout. in *Bull. Soc. r. Bot. Belg.* 36: 11. 1897 = *Apiosordaria rotula* (Cooke) v. Arx.

S. uvicola Viala & Marsais in *Annl. Ins. natn. Rech. agron., Paris (C)* 2: 68. 1927 = *S. destruens* (Shear) Hawk. (Lundqvist, 1972) = *S. fimicola* (Cain, 1950).

S. vagans De Not. in *Comm. Soc. critt. ital.* 2: 479. 1867. — The type was not available for examination. Its description is inadequate for the recognition of the fungus.

S. valsoides (Peck) Sacc., *Syll. Fung.* 1: 235. 1882 = *Podospora appendiculata* (Auersw.) Niessl (Mirza & Cain, 1969).

S. verruculosa (Jensen) Sacc. in *Syll. Fung.* 24: 845. 1928 = *Apiosordaria verruculosa* (Jensen) v. Arx & Gams.

S. vesticola (Berk. & Br.) Höhn. in *Annl. Mycol.* 16: 45. 1918 = *Podospora vesticola* (Berk. & Br.) Mirza & Cain (Mirza & Cain, 1969).

S. vestita (Zopf) Sacc. & D. Sacc. in *Syll. Fung.* 18: 604. 1905 = *Podospora communis* (Speg.) Niessl (Mirza & Cain, 1969).

S. violacea Ell. & Ev. in *Am. Nat.* 31: 340. 1897 = *Podosordaria violacea* (Ell. & Ev.) Krug & Cain (Krug & Cain, 1974a).

S. vratislaviensis A. Schm., *Verbreit. coproph. Pilze Schles.*: 22. 1912 = *Podospora fimbriata* (Bayer) Cain (Mirza & Cain, 1969).

S. wiesneri Zuk. in *Verh. zool.-bot. Ges. Wien* 37: 41. 1887 = *Asordaria humana* (Moreau, 1953).

S. winteri P. Karst. in *Bidr. Känn. Finl. Nat. Folk* 23: 151. 1873 = *Podospora appendiculata* (Auersw.) Niessl (Mirza & Cain, 1969).

S. winteri Oud. in *Hedwigia* 21: 123. 1884 = *S. fimicola* (Moreau, 1953).

S. zygospora Speg. in *Michelia* 1: 227. 1878 = *Zygopleurage zygospora* (Speg.) Boed. (Moreau, 1953).

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