A bibliography of *Podospora* and *Schizothecium*, a key to the species, and a description of *Podospora dasypogon* newly recorded from Italy

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ABSTRACT

An update of *Podospora* and *Schizothecium* is presented, based on recent literature. An overview of the genera, and their subfamily, family and order is given, and a collection of *Podospora dasypogon* new to Italy is described. The author provides additional records of species of *Podospora* s.l. described in his previous works, and colour photographs of most taxa recorded from Italy, and a dichotomous key to all *Podospora* s.str. and *Schizothecium* species.

Key words: Systematics, *Sordariales*, *Lasiosphaeriaceae*, *Podosporoideae*, *Podospora* s.str., *Schizothecium*, worldwide key.

INTRODUCTION

Recent molecular studies (HUHNDORF ET AL., 2004; CAI ET AL., 2005; MILLER & HUHNDORF, 2005) have confirmed the independence of *Schizothecium* Corda from *Podospora* Ces., which LUNDQVIST (1972), followed by BARRASA & SOLÁNS (1989), had already proved basing his conclusions on clear developmental and morphological differences. We reported (DOVERI, 2004a; DOVERI & COUÈ, 2007) the reasons why a current of thought (FURUYA & UDAGAWA, 1972; KRUG & KHAN, 1989; BELL & MAHONEY, 1995; KIRK ET AL., 2001; DOVERI, 2004A; CHANG & WANG, 2005) had chosen to keep *Schizothecium* as a synonym of *Podospora*, and why we have changed our opinion (DOVERI & COUÉ, 2007), to agree with LUNDQVIST (1972).

We have dealt partly with *Podospora* s.l. (inclusive of *Schizothecium*) (CACIALLI ET AL., 1997; DOVERI ET AL., 1998; DOVERI ET AL., 2000), and provided a worldwide key to *Podospora* spp. with asci with 4 or more than 8 spores (DOVERI, 2004a). Now we wish to complete our treatment of the genera and, as result of a laborious bibliographical research, provide a key to all *Podospora* and *Schizothecium* species. The work on *Podospora* follows our recent article on *Chaetomium* (DOVERI, 2008): both can be regarded as a continuation of *Fungi Fimicoli Italici* (DOVERI, 2004a). They are not monographs, but we hope they will be a valuable aid to researchers on these genera.

MATERIALS AND METHODS

All Italian collections of *Podospora* and *Schizothecium* spp. were obtained from different kinds of dried dung cultured in non-sterilised moist chambers, and studied according to RICHARDSON & WATLING (1997) and RICHARDSON (2001a) methods, slightly modified by DOVERI (2004a). Dried specimens and slides are deposited at the personal herbarium of the author (CLSM), occasionally at other herbaria (MCVE = Civic Museum of Venice).

TAXONOMY AND SYSTEMATICS

According to LUNDQVIST (1972) and ERIKSSON (2006) *Podospora* and *Schizothecium* belong to subfam. *Podosporoideae* in *Lasiosphaeriaceae* (*Sordariales*):

Sordariales Chad. ex D. Hawksw. & O.E. Erikss., Syst. Ascom. 5(1): 182, 1986.
Lasiosphaeriaceae Nannf., Nova Acta R. Soc. Scient. Upsal. *Ser. 48 (2): 50, 1932.*
Podosporoideae N. Lundq., Symb. Bot. Upsal. *20: 118, 1972.*
Podospora Ces. in Rabenh., Bot. Zeit. Beil.*: 429, 1856.*
Schizothecium Corda, Icones Fung.*: 29, 1838.*

Sordariales

Ontogeny ascohymenial with asci arising from special hyphal branches (ascogonia), surrounded by somatic hyphae. Ascomata perithecioid or cleistothecioid with a true wall (not delimited by stromatic tissue, but sometimes surrounded by it) and a hymenium not exposed at maturity, minute to medium-large, polymorphous, typically dark, membranous to coriaceous, glabrous or hairy. Stromatic tissue, when present, not forming crusts. Peridium not formed of compressed rows of cells, as in *Xylariales* Nannf. Asci unitunicate or prototunicate, anamyloid, exceptionally dextrinoid, fasciculate, with or without an apical ring. Paraphyses usually present and mixed with the asci. Spores hyaline to dark pigmented, one- to poly-celled, usually with germ pore(s) or slits, often with a gelatinous equipment. Anamorphs often absent.

Saprobic species on dung, fungi, wood, soil. Occasionally pathogenic.

According to ERIKSSON (2006) this order includes 3 families, *Chaetomiaceae* G. Winter, *Lasiosphaeriaceae* and *Sordariaceae* G. Winter, respectively including 15, 27, and 10 genera. Another 20 genera of uncertain position are also placed in *Sordariales*.

Lasiosphaeriaceae

Ascomata superficial or semi-immersed, perithecioid or rarely cleistothecioid, glabrous, or hairy or setose, rarely surrounded by stromatic tissue or with a basal subiculum. Peridium layered, usually pseudoparenchymatous, sometimes with a gelatinised layer, rarely prosenchymatous, with predominant brown shades. Asci usually persistent, cylindric-clavate to saccate, rarely cylindrical, 4- to polyspored, with or without an apical ring, often swelling at maturity. Spores uni- or biseriate or conglobate, one- to poly-celled, not bilaterally flattened, variously shaped (cylindric-vermiform, subglobose, ellipsoidal, clavate, allantoid, lunate), hyaline or partly or fully pigmented at maturity, smooth or ornamented, with 0-4 germ pores, with or without a gelatinous sheath or caudae. Paraphyses often filiform, evanescent, rarely absent. Anamorph, when present, hyphomycetous, not prominent (CANNON & KIRK, 2007). Widespread on dung and wood, rarely on soil.

Podosporoideae

Spores at least partly pigmented at maturity and only in this state discharged from the asci (never when hyaline), exceptionally cylindric-vermiform, one- to four-celled, often with a gelatinous equipment in the shape of sheath or caudae, usually not containing oil drops. Asci 4- to very many spored, with or without an apical ring, usually lacking a plasma globulus. Particularly on dung. According to Lundqvist (1972) this subfamily includes most brown-spored genera.

Podospora (after LUNDQVIST's emendation, 1972)

Ascomata perithecioid, not stromatic, glabrous or more often hairy, lacking, however, swollen agglutinated hairs. Peridium pseudoparenchymatous, of a *textura angularis*, membranous to coriaceous, then with a gelatinised layer. Asci cylindric-clavate to saccate, rarely cylindrical, 4- to more than 2000-spored, mostly 8-spored, with or without an apical ring. Spores bi- to multiseriate, exceptionally uniseriate. Immature spores hyaline, polymorphous, rarely ellipsoidal or fusiform, one-celled or rarely tranversely septate. Mature spores two-celled, subdivided by a late, transverse septum into a dark pigmented upper portion (head), usually ellipsoidal and with a single germ pore, and a hyaline, usually empty, and easily collapsing lower portion ("pedicel" or "primary appendage"). Pedicel polymorphous, especially cylindrical or obclavate, rarely absent. Spores with or exceptionally without a gelatinous equipment of sheaths and/or caudae ("secondary appendages"), the latter variously structured and shaped, often solid and lash-like, also hollow or longitudinally channelled or furrowed, sometimes fibrillose. True filiform-ventricose paraphyses, mixed with the asci, present.

More than ninety species, usually coprophilous, rarely on soil or plant debris.

Schizothecium [after LUNDQVIST's (1972) emendation, mainly based on developmental and morphological features, and the revision of CAI ET AL. (2005), based on molecular studies]

Ascomata perithecioid, not stromatic, with swollen, agglutinated or more rarely isolated, articulated or one-celled hairs, sometimes in a palisade or gathering in triangular scales particularly at the perithecial neck base. Perithecia often covered with hyphoid hairs, and perithecial neck with or without filiform, rigid hairs. Peridium membranous, pseudoparenchymatous, of a *textura globulosa* or *globulosa-angularis*. Asci cylindrical to clavate, 4- to 64-spored, often lacking an apical ring. Spores bi- to multiseriate, exceptionally uniseriate. Immature spores hyaline ellipsoidal or fusiform, rarely clavate, one-celled. Mature spores two-celled, subdivided by an early, transverse septum into a dark pigmented, usually ellipsoidal upper portion (head), with a single germ pore, and a hyaline, plasma-filled, mostly cylindrical, and persistent lower portion ("pedicel" or "primary appendage"). Spores usually with a gelatinous equipment of a thin sheath and/or usually solid and lash-like caudae. True filiform-ventricose paraphyses, mixed with the asci, absent, replaced with moniliform paraphyses enveloping the asci ("jacket" paraphyses).

Twenty four species, usually coprophilous, rarely on soil seeds, or plant debris.

Description of *Podospora dasypogon new to Italy*

Podospora dasypogon N. Lundq.

Symb. Bot. Upsal. 20 (1): 157, 1972. Figs.22-23

Original diagnosis

LUNDQVIST N., 1972. Symbolae Botanicae Upsalienses 20 (1): 157.

Perithecia obpyriformia, 720-1170 (-1500) × 430-850 µm, deorsum pilis flexuosis, olivaceo-brunneis copiose obtecta, sursum pilis strictis, plerumque brevibus, agglutinatis instructa, fasciculo acuto formantibus. Peridium membranaceum, semipellucidum vel subopacum, olivaceo-brunneum, tristratum, cellulis externis angulatis, 5-8 µm diam. Paraphyses indistinctae. Asci 8-spori, 240-360 × 40-60 µm, clavati, apice angusto attenuato, sine annulo apicali. Sporae biseriatae, maturitate bicellulares; cellula superior nigro-brunnea, 28-38 (-42) × 18-23 µm, ellipsoidea sed modice inaequilateralis, basi truncata, poro germinali apicali instructa; pedicellus hyalinus, cylindraceus vel attenuatus, (16-) 21-25 × 6-9 µm, collabens. Cauda gelatinosa superior subapicalis, attenuata, solida, 70-160 × 10-15 × 10-11 µm, proximaliter modice applanata; cauda basalis extremis pedicelli affixa, attenuata, solida, non applanata, 70-160 × 6-10 µm. Fimicola.

MATERIAL: ITALY: 1) VICENZA, Valli del Pasubio-Rifugio Balasso, 900 m, about ten gregarious, immersed (except for the neck) specimens on cattle dung in a moist chamber culture, A. Bizzi, 29.11.06, 102.1-Recoaro Terme, CLSM 012.06.

Description

Perithecia 700-800 × 500-650 µm, pyriform, olive-brown, semitransparent, membranous, covered with very abundant, hyphoid hairs, forming a dense net. Neck well differentiated, cylindric, blackish, subcoriaceous, up to 300 µm long, covered with dense hairs, usually agglutinated in tufts. ***Peridium*** three-layered, pseudoparenchymatous: 1) endostratum of pale, thin-walled, polygonal cells, 12.5-25 × 10-20 µm, supporting, at the perithecial neck, numerous periphyses; 2) mesostratum of pale, thin-walled, flattened cells; 3) exostratum of olive-brown (darker towards the neck), almost quadrangular, thick-walled cells, 5-12 µm diam. ***Hyphoid hairs*** dark brown, thick-walled, septate, branched, 1.5-2.5 µm diam. ***Neck hairs*** similar to the hyphoid hairs, shorter (up to 250 µm long), less wavy, 1.5-2.5 µm diam. ***Paraphyses*** hyaline, reduced to an indistinct mass. ***Asci*** 270-300 × 40-45 µm, 8-spored, cylindric-lageniform at first, clavate-lageniform at maturity, lacking an apical ring, very long-stalked, somewhat pointed at the apex. ***Spores*** biseriate, one-celled, clavate, hyaline to olive-yellow at first, becoming two-celled and pigmented. Spore head (31-) 33-38 (-40) × (17-) 18-20 (-22) µm, ellipsoidal (Q= 1.66-2.00; Q= 1.87), often somewhat asymmetrical, dark brown, smooth, thick-walled, rounded at the base, fairly pointed at the apex, with an apical, rarely slightly eccentric germ pore. Pedicel hyaline, narrowly triangular as tapering towards its somewhat pointed apex, enlarged at the base, straight or slightly inclined, 18-25 × 7.5-9 µm. Upper gelatinous cauda lash-like, subapical (not covering the germ pore), 50-100 × 10 µm, wavy, solid, longitudinally and broadly furrowed at its base, tending to swell at

intervals. Lower cauda solid, smaller than the upper one, up to 42 × 5 µm, arising from the pedicel apex, with a basal, narrower furrow. Both caudae with crystalline deposits. Sometimes two additional gelatinous sheaths can be observed, the former partly covering the apical part of the spore head, the latter partly covering the pedicel.

Observations

LUNDQVIST (1972) placed *P. dasypogon* in sect. *Malinvernia* (Rabenh.) N. Lundq., which is characterised by usually clavate young spores, a well developed spore pedicel, reduced paraphyses, lack of a pseudobombardioid peridium (absence of a middle, non stromatic, gelatinous layer), and usually lack of the ascal ring. In this section *P. dasypogon* is distinguishable by its wholly hairy perithecia with agglutinated neck hairs, 8-spored asci, and medium-size, slightly asymmetrical spores with one gelatinous cauda at each end and a tapering pedicel. The closest species is *P. pyryformis* (A. Bayer) Cain which, however, has larger spores (36-45 × 22-27 µm, LUNDQVIST, 1972; 38.8-44 × 22-27.3 µm, DOVERI, 2004) with a longer, cylindrical pedicel, and almost glabrous perithecia. In LUNDQVIST's (1972) opinion *P. dasypogon* is also similar to *P. mexicana* Mirza & Cain, which differs from the latter in having smaller perithecia and much shorter, non-agglutinated neck hairs (MIRZA & CAIN, 1969). Perithecia of our collection are somewhat smaller than those of the original description, but all the other features match the type.

According to LUNDQVIST (1972), and in our experience, *P. dasypogon* grows slowly on old dung, reaching its maturity after one month, or even later, in damp chamber cultures. Our finding in Italy is exceptional, as this species has been scarcely reported in literature and all records come from North Europe (LUNDQVIST, 1972; 1973; 1981; 1997), usually from cattle dung, rarely from horse and sheep.

Accepted species of *Podospora* and *Schizothecium*

N.B.: 1) The species found in Italy are indicated by bold type, and for each species the total number of findings, and the dung types on which they were found, is given.
2) The numbers after the REFERENCES heading refer to the references at the end of this work, in which the taxon was described or discussed, e.g.:

Podospora alexandri Doveri
RdM 47 (3): 212, 2004.
EXAMINED MATERIAL: ITALY: VICENZA, Enego, 850 m, dozens of gregarious, semi-immersed or immersed specimens (often only the neck exposed) on horse dung, F. Doveri, 3.6.04, 083.4-Arsié, CLSM 033.04.
TOTAL 1: horse 1.
REFERENCES: 65.

Podospora adelura (Griffiths) Cain
Can. J. Bot. 40: 459.

≡ *Pleurage adelura* Griffiths, Mem. Torrey Bot. Club 11: 91, 1901.

REFERENCES: 37-38-64-83-84-115-128.

Podospora aegyptiaca N. Lundq.
Svensk Bot. Tidskr. 64 (4): 409, 1970.

REFERENCES: 64-113-114-199.

Podospora alexandri Doveri
RdM 47 (3): 212, 2004. Figs.1-2
EXAMINED MATERIAL: ITALY: VICENZA, Enego, 850 m, dozens of gregarious, semi-immersed or immersed specimens (often only the neck exposed) on horse dung, F. Doveri, 3.6.04, 083.4-Arsié, CLSM 033.04.
TOTAL 1: horse 1.
REFERENCES: 65.

Schizothecium alloeochaetum (Mirza & Cain) L. Cai in Cai et al.
Fungal Diversity 19: 13, 2005.

≡ *Podospora alloeochaeta* Mirza & Cain, Can. J. Bot. 47: 2003, 1969.

REFERENCES: 31-64-128.

Schizothecium aloides (Fuckel) N. Lundq.

Symb. Bot. Upsal. 20 (1): 253, 1972. Figs.3-4

≡ *Sordaria aloides* Fuckel, Fungi rhenani exsic. n° 2549, 1863-1874.
≡ *Sordaria curvula* de Bary var. *aloides* (Fuckel) G. Winter, Bot. Zeitung 31: 485, 1873.
= *Sphaeria valsoides* Peck, Rep. Bot. 28: 79, 1876.
= *Sordaria coronifera* Grove, Journ. Bot. 54: 185, 1916.
= *Pleurage curvula* (de Bary) Kuntze var. *coronifera* (Grove) C. Moreau, Encycl. Mycol. 25: 235, 1953.
≡ *Podospora aloides* (Fuckel) Mirza & Cain, Can. J. Bot. 47: 2004, 1969.

EXAMINED MATERIAL: ITALY: 1) BRESCIA, Gaver, 1500 m, some scattered, semi-immersed specimens on cattle dung, G. Medardi, 5.95, 079.3-Bagolino, ERB2-SVM-10751. 2) MACERATA, Piobbico, 500 m, on cattle dung, F. Doveri, 2.5.02, 325.1-Bolognola, CLSM 01996 ter. 3) REGGIO CALABRIA, Gambarie, 1300 m, on cattle dung, A. Bizzi, 17.10.03, 602.1-Gambarie, CLSM 01996 quater. 4) CAMPOBASSO, Vinchiaturo, 500 m, on cattle dung in culture, F. Doveri, 13.10.04, 405.2-Vinchiaturo, CLSM 01996 penta. 5) TRENTO, Malga Melegnun, 1300 m, on cattle dung in culture, F. Doveri, 3.9.04, 081.1-Caldonazzo, CLSM 01996 esa. 6) BELLUNO, Canale d'Agordo-Geres, 1380 m, on cattle dung, A. Bizzi, 26.6.05, 045.1-Cencenighe Agordino, CLSM 01996-epta. 7) TRENTO, Malga di Sadron, 1450 m, on cattle dung in culture, F. Doveri, 8.9.07, 042.1-Malé, CLSM 01996-octo.
TOTAL 7: cattle 7.
REFERENCES: 15-20-31-37-64-67-70-77-85-93-114-128-130-135-144-159-170-172-210-212.

Podospora ampullacea Cailleux

Cah. Maboké 7 (2): 100, 1969.

REFERENCES: 18-35-36-64.

Podospora anomala (Griffiths) Cain

Can. J. Bot. 40: 460, 1962.

≡ *Pleurage anomala* Griffiths, Mem. Torr. Bot. Cl. 11: 56, 1901.

REFERENCES: 38-64-83-84-128-130.

Podospora anserina (Ces. ex Rabenh.) Niessl

Hedwigia 22: 156, 1883. Figs.5-6

= *Sphaeria anserina* Ces., in litt.
≡ *Malinvernia anserina* Ces. ex Rabenh., Hedwigia 1: 116, 1856.
= *Sphaeria pauciseta* Ces. in Rabenh, Kl. Herb. Viv. Myc., ed. 1: 1643, 1852.
= *Sordaria pauciseta* (Ces.) Ces. & De Not., Comm. Soc. Critt. Ital. 1: 226, 1863.
= *Malinvernia pauciseta* (Ces.) Fuckel, Fungi Rhen. 1002, 1864.
= *Malinvernia breviseta* Fuckel, Jahrb. Nass. Ver. Naturk. 24: 243, 1870.
= *Sordaria breviseta* (Fuckel) P. Karst., Bidr. Känn. Finl. Nat. Folk. 23: 52, 1873.
≡ *Sordaria anserina* (Ces. ex Rabenh.) G. Winter, Bot. Zeit. 31: 483, 1873.
= *Sphaeria breviseta* (Fuckel) W. Phillips & Plowr., Grevillea 2: 187, 1874.
= *Sordaria anserina* f. *ovina* Sacc., Mycoth. Ven. 1179, 1878.
= *Hypocopra erecta* Speg., Anal. Soc. Cient. Argent. 10: 15, 1880.
= *Sordaria erecta* (Speg.) Sacc., Syll. Fung. 1: 239, 1882.
= *Podospora erecta* (Speg.) Niessl, Hedwigia 22: 156, 1883.
= *Sordaria penicillata* Ellis & Everh., Journ. Mycol. 4: 78, 1888.
= *Podospora penicillata* (Ellis & Everh.) Ellis & Everh., North Amer. Pyren.: 131, 1892.
≡ *Pleurage anserina* (Ces. ex Rabenh.) Kuntze, Rev. Gen. Plant. 3 (3): 504, 1898.
= *Pleurage erecta* (Speg.) Kuntze, Rev. Gen. Plant. 3 (3): 505, 1898.
= *Pleurage penicillata* (Ellis & Everh.) Kuntze, Rev. Gen. Plant. 3 (3): 505, 1898.
= *Sordaria communis* (Speg.) Sacc. var. *tetraspora* Speg., Anal. Mus. Nac. Buenos Aires 6: 253, 1899.

= *Podospora pauciseta* (Ces.) Traverso, Fl. Ital. Crypt. 1, Fungi 1: 431, 1907.
≡ *Bombardia anserina* (Ces. ex Rabenh.) Mig., Thome's Krypt. Fl. 10 (1): 123, 1912.
≡ *Schizothecium anserinum* (Ces. ex Rabenh.) E.A. Bessey, Morph. Tax. Fungi: 264, 1950.
= *Podospora filiformis* Cailleux, Cah. Maboké 7: 102, 1969.

EXAMINED MATERIAL: ITALY: 1) GORIZIA, Cona isle, 0 m, four gregarious, semi-immersed specimens on horse dung in culture, F. Bersan, 8.97, 109.1-Duino, AMB 6144. 2) GROSSETO, Principina terra, 0 m, on rabbit dung in culture, F. Doveri, 2.4.98, 331.3-Alberese, CLSM 02697 bis. 3) ROVIGO, isola di Albarella, 0 m, on deer dung, G. Robich, 14.6.99, 170.3-Porto Levante, CLSM 02697 ter. 4) VICENZA, Sarego (Monte Roccolo), 250 m, on horse dung in culture, A. Bizzi, 20.8.99, 125.2-Longare, CLSM 02697 quater. 5) VICENZA, Sarego (Monte Cocco), 230 m, on horse dung in culture, A. Bizzi, 20.8.99, 125.2-Longare, CLSM 02697 penta. 6) VICENZA, Lugo, 350 m, on horse dung, A. Bizzi, 29.10.99, 103.1-Marostica, CLSM 02697 esa. 7) VICENZA, Sarego (Monte Giaretta), 250 m, on horse dung in culture, A. Bizzi, 11.12.00, 125.3-Montebello, CLSM 02697 epta. 8) VICENZA, Longare (loc. Lumigliano-Monte Broion), 150 m, on raven dung in culture, A. Bizzi, 12.10.00, 125.2-Longare, CLSM 02697 octo. 9) POTENZA, Monticchio (loc. laghi di Monticchio), 600 m, on sheep dung in culture, A. Bizzi, 10.11.00, 451.1-Melfi, CLSM 02697 ena. 10) VICENZA, Gallio-loc. Malga Molina, 1600 m, on horse dung in culture, A. Bizzi, 12.10.01, 082.1-Monte Lisser, CLSM 02697 deca. 11) TREVISO, Borso-loc. Monte Grappa-Campo Croce, 1200 m, on sheep dung in culture, A. Bizzi, 10.8.01, 083.3-Monte Grappa, CLSM 02697-XI. 12) ROVIGO, isola di Albarella, 0 m, on roe deer dung, A. Bizzi, 16.11.02, 170.3-Porto Levante, CLSM 02697-XII. 13) VENEZIA, Ca' Savio, 0 m, on wild rabbit dung in culture, A. Bizzi, 2.11.02, 128.3-Venezia, CLSM 02697-XIII. 14) UDINE, Piani Montasio, 1800 m, on marmot dung in culture, L. Levorato, 2.7.03, 033.3-Saletto, CLSM 02697-XIV. 15) VERONA, Molina, 800 m, on horse dung, A. Bizzi, 18.9.03, 101.2-Dolcè, CLSM 02697-XV. 16) VICENZA, Grancona, on sheep dung in culture, A. Bizzi, 20.4.04, 125.3-Montebello Vicentino, CLSM 02697-XVI. 17) CAMPOBASSO, Campitello di Sepino, 1350 m, on horse dung in culture, F. Doveri, 14.10.04, 405.2-Vinchiaturo, CLSM 02697-XVII. 18) CAMPOBASSO, Vinchiaturo, 500 m, on cattle dung in culture, F. Doveri, 13.10.04, 405.2-Vinchiaturo, CLSM 02697-XVIII. 19) COSENZA, S. Fili, on sheep dung in culture, C. Lavorato, 3.4.05, 559.1-Rende, CLSM 02697-XIX. 20) VICENZA, SArego-Monte Roccolo, 250 m, on sheep dung in culture, A. Bizzi, 22.4.05, 125.2-Longare, CLSM 02697-XX. 21) CUNEO, Viola-loc. il Colletto, 1100 m, on cattle dung in culture, A. Bizzi, 14.9.05, 227.2-Pamperato, CLSM 02697-XXI. 22) BELLUNO, Lorenzago, 1600 m, on donkey dung in culture, L. Levorato, 26.6.05, 030.3-Pieve di Cadore, CLSM 02697-XXII. 23) VICENZA, Monte Caldiero-Grancona, on sheep dung, A. Bizzi, 7.8.05, 125.3-Montebello Vicentino, CLSM 02697-XXIII. 24) LIVORNO, Palazzi di Cecina, 0 m, on cattle dung in culture, F. Doveri, 30.4.06, 294.1-Cecina, CLSM 02697-XXIV. 25) VICENZA, Recoaro Terme, 950 m, on sheep dung in culture, F. Doveri, 8.6.07, 102.1-Recoaro Terme, CLSM 02697-XXV. 26) TRENTO, Dimaro-Malghetta, 1100 m, on hare dung in clture, F. Doveri, 8.9.07, 042.1-Malé, CLSM 02697-XXVI.
TOTAL 26: horse 8; sheep 7; cattle 3; deer 1; donkey 1; hare 1; marmot 1; rabbit 1; raven 1; roe deer 1; wild rabbit 1.
REFERENCES: 3-9-13-14-15-18-35-36-37-43-46-53-54-55-59-60-62-64-67-70-76-78-79-83-84-93-102-108-110-114-115-119-122-124-128-130-144-145-148-154-156-157-164-168-171-176-177-178-186-190-192-195-199-203-205-210-212.

Podospora appendiculata (Auersw. ex Niessl) Niessl

Hedwigia 22: 156, 1883.

= *Sordaria coprophila* (Fr.: Fr.) Ces. & De Not. f. *hirtula* P. Karst., Fungi Fenn. n° 284, 1865 (nom. nud.).
≡ *Sordaria appendiculata* Auersw. ex Niessl, Verh. Nat. Ver. Brünn. 10: 188, 1872.
= *Sordaria winteri* P. Karst., Mycol. Fenn. 2: 251, 1873.
= *Sphaeria amphicornis* Ellis, Bull. Torr. Bot. Cl. 6: 109, 1876.
= *Sphaeria eximia* Peck, 28th Ann. Rep. N. Y. St. Mus. Nat. Hist. 1876: 78, 1879.
= *Sordaria amphicornis* (Ellis) Sacc., Syll. Fung. 1: 235, 1882.
= *Podospora winteri* (P. Karst.) Niessl, Hedwigia 22: 156, 1883.
≡ *Podospora fimiseda* (Ces. & De Not.) Niessl var. *appendiculata* (Auersw. ex Niessl) G. Winter in Rabenh., Rabenh. Kript.-Fl.: 170, 1887.
= *Podospora amphicornis* (Ellis) Ellis & Everh., N. Am. Pyren.: 130, 1892.
≡ *Pleurage appendiculata* (Auersw. ex Niessl) Kuntze, Rev. Gen. Plant.: 505, 1898.
= *Pleurage winteri* (P. Karst.) Kuntze, Rev. Gen. Plant.: 505, 1898.
≡ *Sordaria fimiseda* Ces. & De Not. var. *appendiculata* (Auersw. ex Niessl) Massee & E.S. Salmon, Ann. Bot. 15 (58): 340, 1901.
= *Pleurage superior* Griffiths, Mem. Torr. Bot. Cl. 11: 68, 1901.

= *Sordaria superior* (Griffiths) Sacc. & D. Sacc., Syll. Fung. 17: 603, 1905.

REFERENCES: 15-22-33-37-61-62-64-70-78-83-84-95-103-114-121-122-128-130-134-135-138-144-160-162-171-186-193-206-212.

Podospora araneosa (Cain) Cain
Can. J. Bot. 40: 459, 1962. Figs.7-8

≡ *Sordaria araneosa* Cain, Univ. Toronto Stud. Mycol. Ser. 38: 52, 1934.

REFERENCES: 36-37-38-44-64-103-114-128-130-199-200.

Podospora argentinensis (Speg.) Mirza & Cain
Can. J. Bot. 47: 2008, 1969.

≡ *Sordaria argentinensis* Speg., *Anal. Mus. Nac. Buenos Aires* 23 : 49, 1912.
≡ *Pleurage argentinensis* (Speg.) C. Moreau, *Encycl. Mycol.* 25: 252, 1953.

REFERENCES : 18-36-52-64-79-102-110-114-115-128-130-143-154-157-183-199-205.

Podospora australis (Speg.) Niessl
Hedwigia 22: 156, 1883. Figs.9-10

≡ *Hypocopra australis* Speg., Anal. Soc. Cie. Argent. 10: 137, 1880
≡ *Sordaria australis* (Speg.) Sacc., Syll. Fung. 1: 239, 1882.
≡ *Pleurage australis* (Speg.) Kuntze, Rev. Gen. Plant. 3 (3): 505, 1898.
= *Sordaria apiculifera* Speg. Anal. Mus. Nac. Buenos Aires 6: 251, 1899.
= *Pleurage taenioides* Griffiths, Mem. Torrey Bot. Club 11: 58, 1901.
= *Sordaria taenioides* (Griffiths) Sacc., Syll. Fung. 17: 602, 1905.
= *Sordaria macrura* A. Bayer, Acta Soc. Sci. Nat. Moraviae 1: 95, 1924.
= *Pleurage apiculifera* (Speg.) C. Moreau, Encycl. Mycol. 25: 252, 1953.
= *Podospora taenioides* (Griffiths) Cain, Can. J. Bot. 40: 460, 1962.
= *Podospora apiculifera* (Speg.) Mirza & Cain, Can. J. Bot. 47: 2006, 1969.

EXAMINED MATERIAL: ITALY: 1) GORIZIA, isola della Cona, 0 m, five isolated, almost fully immersed specimens, on horse dung in culture, F. Bersan, 8.97, 109.1-Duino, AMB 6154. 2) BRESCIA, Masaga, 1000 m, on roe deer dung, G. Medardi & C. Gallinari, 10.7.99, 100.1-Valvestino, CLSM 02997 bis. 3) RAVENNA, Marina Romea, 0 m, on horse dung in culture, F. Doveri, 6.4.01, 223.1-Marina Romea, CLSM 02997-ter. 4) L'AQUILA, Campo di Giove, 1100 m, on goat dung in culture, E. Bizio, 20.9.01, 370.3-Cansano, CLSM 02997 quater. 5) MACERATA, Pintura di Bolognola, 1600 m, on cattle dung in culture, F. Doveri, 3.5.02, 325.1-Bolognola, CLSM 02997 penta. 6) MACERATA, Pintura di Bolognola, 1600 m, on wild rabbit dung in culture, F. Doveri, 3.5.02, 325.1-Bolognola, CLSM 02997 esa. 7) BELLUNO, Lorenzago, 900 m, on roe deer dung in culture, A. Bizzi, 22.7.02, 030.3-Pieve di Cadore, CLSM 02997-epta. 8) RAVENNA, Ponte Bottole pinewood, 0 m, on fallow deer dung in culture, A. Bizzi, 16.11.02, 223.1-Marina Romea, CLSM 02997 octo. 9) ROVIGO, isola di Albarella, 0 m, on roe deer dung in culture, A. Bizzi, 16.11.02, 170.3-Porto Levante, CLSM 02997 ena. 10) LECCO, Premana (Piano di Camaggiore), 1190 m, on goat dung in culture, A. Bizzi, 7.6.03, 055.3-Premana, CLSM 02997 deca. 11) COSENZA, Longobucco-loc. Cozzo Pica, 1000 m, on sheep dung in culture, C. Lavorato, 10.8.04, 552.2-Longobucco, CLSM 02997-XI. 12) FERRARA, Bosco della Mesola, 0 m, on fallow deer dung in culture, A. Bizzi, 12.11.05, 187.1-Mesola, CLSM 02997-XII.
TOTAL 12: roe deer 3; fallow deer 2; goat 2, horse 2; cattle 1; sheep 1; wild rabbit 1.
REFERENCES: 13-18-24-37-42-47-52-64-67-78-79-83-84-102-103-110-114-115-128-130-141-144-156-160-174-179-182-186-191-192-193-199.

Podospora austroamericana (Speg.) Mirza & Cain
Can. J. Bot. 47: 2010, 1969.

≡ *Hypocopra austroamericana* Speg., Anal. Soc. Cient. Argentina 10: 137, 1880.
= *Hypocopra austroamericana* Speg. *var. agave-americana* Speg., Anal. Soc. Cient. Argentina 12: 177, 1881.
≡ *Sordaria austroamericana* (Speg.) Sacc., Syll. Fung. 1: 237, 1882.
= *Podospora castorinospora* Cain, Can. J. Bot. 40: 450, 1962.
= *Sordaria allahabadensis*M.P. Srivast., Tandon, Bhargava & A.K. Ghosh, Mycopath. Mycol. appl. 30(3-4): 203, 1966.REFERENCES: 38-64-88-102-110-123-128-160-179.

Podospora austrohemisphaerica N. Lundq. in Lundqvist et al.
Mycologia 91 (2): 406, 1999. Figs.11-12

REFERENCES: 18-64-65-110-118.

Podospora bicolor Cailleux
Cah. Maboké 7 (2): 100, 1969.

REFERENCES: 18-35-36-64-114.

Podospora bicornis N. Lundq.
Svensk Bot. Tidskr. 64 (4): 412, 1970.

REFERENCES: 3-64-113-114-115-196.

Podospora bifida N. Lundq.
Symb. Bot. Upsal. 20 (1): 182, 1972. Fig.13

EXAMINED MATERIAL: ITALY: 1) MACERATA, Macchia di Fuoco, 550 m, about fifteen scattered, semi-immersed specimens, on horse dung in culture, A. Bizzi, 3.5.02, 313.1-S. Ginesio, CLSM 011.02. 2) REGGIO CALABRIA, Passo Petrulli (Aspromonte), 1100 m, on sheep dung in culture, F. Doveri, 17.10.03, 602.4-Santo Stefano in Aspromonte, CLSM 011.02 bis.
TOTAL 2: horse 1; sheep 1.
REFERENCES: 18-64-114-206.

Podospora brasiliensis Cain
Can. J. Bot. 40: 450, 1962.

REFERENCES: 36-38-64-79-128.

Podospora caligata R.S. Khan & Cain
Can. J. Bot. 50: 1649, 1972.

REFERENCES: 3-64-97-98-114.

Schizothecium carpinicola (Mouch.) L. Cai in Cai et al.
Fungal Diversity 19: 13, 2005.

≡ *Podospora carpinicola* Mouch., Persoonia 13: 107, 1986.

REFERENCES: 31-64-88-133.

Schizothecium cervinum (Cain) N. Lundq.
Symb. Bot. Upsal. 20: 253, 1972.

≡ *Sordaria cervina* Cain, Univ. Toronto Stud. Mycol. Ser. 38: 36, 1934.
≡ *Pleurage cervina* (Cain) C. Moreau, Encycl. Mycol. 25: 255, 1953.
≡ *Podospora cervina* (Cain) Cain, Can. J. Bot. 40: 459, 1962.

REFERENCES: 31-37-38-64-114-128-130.

Podospora cochleariformis Cailleux
Cah. Maboké 7 (2): 100, 1969.

REFERENCES: 35-36-64-88.

Podospora collapsa (Griffiths) Cain
Can. J. Bot. 40: 459, 1962.

≡ *Pleurage collapsa* Griffiths, Mem. Torr. Bot. Cl. 11: 89, 1901.

REFERENCES: 37-38-61-64-83-84-115-128-130.

Podospora comata Milovtz.
Trans. Inst. Bot. Charkov 2: 20, 1937.

REFERENCES: 42-64-79-102-115-126-128-129-157.

Podospora communis (Speg.) Niessl
Hedwigia 22: 156, 1883. Fig.14

≡ *Hypocopra communis* Speg., Anal. Soc. Cie. Argent. 10: 14, 1880.
≡ *Sordaria communis* (Speg.) Sacc., Syll. Fung. 1: 231, 1882.
= *Sordaria vestita* Zopf, Zeits. Naturw. 56: 556, 1883.
= *Podospora vestita* (Zopf) G. Winter, Rabenh. Krypt. Fl. 1 (2): 176, 1885.
= *Sordaria macrostoma* Speg., Anal. Mus. Nac. Buenos Aires 6: 252, 1899.
= *Pleurage vestita* (Zopf) Griffiths, Mem. Torrey Bot. Club 11: 76, 1901.
= *Bombardia vestita* (Zopf) Mig., Thome's Krypt. Fl. 10 (1): 126, 1913.
= *Sordaria occidentalis* Bat. & Pontual, Bol. Agric. Pernambuco 15: 38, 1948.
= *Pleurage macrostoma* (Speg.) C. Moreau, Encycl. Mycol. 25: 262, 1953.

EXAMINED MATERIAL: ITALY: 1) GORIZIA, isola della Cona, 0 m, dozens of gregarious, superficial or semi-immersed specimens on horse dung in culture, F. Bersan, 8.97, 109.1-Duino, AMB 6151. 2) VICENZA, Recoaro, 1000 m, on sheep dung in culture, A. Bizzi, 10.9.98, 102.1-Recoaro Terme, CLSM 02897 bis. 3) ROVIGO, isola di Albarella, 0 m, on deer dung, G. Robich, 14.6.99, 170.3-Porto Levante, CLSM 02897 ter. 4) VICENZA, Sarego (Monte Roccolo), 250 m, on horse dung in culture, A. Bizzi, 20.8.99, 125.2-Longare, CLSM 02897 quater. 5) VICENZA, Sarego (Monte Cocco), 230 m, on horse dung in culture, A. Bizzi, 125.3-Longare, 125.2-Longare, CLSM 02897 penta. 6) VICENZA, Recoaro (Monte Rasta), 1000 m, on roe deer dung in culture, A. Bizzi, 9.9.99, 102.2- Valdagno, CLSM 02897 esa. 7) MILANO, parco di Monza, 150 m, on horse dung in culture, F. Doveri, 26.5.00, 118.1-Monza, CLSM 02897 epta. 8) VICENZA, Sarego-Monte Roccolo, 250 m, on sheep dung in culture, A. Bizzi, 9.00, 125.3-Montebello, CLSM 02897 octo. 9) VICENZA, Grancona (Monte Caldiero), 230 m, on sheep dung in culture, A. Bizzi, 9.00, 125.3-Montebello, CLSM 02897 ena. 10) VERONA, Roveré Veronese, on cattle dung in culture, F. Doveri, 5.10.00, 102.3-Bosco Chiesanuova, CLSM 02897 deca. 11) LECCE, Vanze, 10 m, on horse dung in culture, V. Sciurti & F. Doveri, 24.11.01, 513.4-S. Foca, CLSM 02897-XI. 12) LECCE, Vanze, 10 m, on goat dung in culture, V. Sciurti & F. Doveri, 24.11.01, 513.4-S. Foca, CLSM 02897-XII. 13) MACERATA, Macchia di Fuoco, 550 m, on horse dung in culture, A. Bizzi, 3.5.02, 313.1-S. Ginesio, CLSM 02897-XIII. 14) LECCO, Concenedo, 920 m, on donkey dung in culture, F. Doveri, 6.6.03, 076.4-Barzio, CLSM 02897-XIV. 15) LECCO, Concenedo, 920 m, on cattle dung in culture, F. Doveri, 6.6.03, 076.4-Barzio, CLSM 02897-XV. 16) VERONA, Molina, 800 m, on horse dung in culture, A. Bizzi, 18.9.03, 101.2-Dolcè, CLSM 02897-XVI. 17) VICENZA, Enego, 850 m, on horse manure in culture, F. Doveri, 3.6.04, 083.4-Arsié, CLSM 02897-XVII. 18) TRENTO, Malga Melegnun, 1300 m, on cattle dung in culture, A. Bizzi, 3.9.04, 081.1-Caldonazzo, CLSM 02897-XVIII. 19) BELLUNO, Canale d'Agordo, 1380 m, on cattle dung in culture, A. Bizzi, 26.6.05, 045.1-Cencenighe Agordino, CLSM 02897-XIX. 20) L'AQUILA, Ovindoli-Piani del Sirente, 1050 m, on cattle dung in culture, F. Doveri, 9.6.06, 368.1-Ovindoli, CLSM 02897-XX. 21) L'AQUILA, Ovindoli, 1350 m, on cattle dung in culture, F. Doveri, 9.6.06, 368.1-Ovindoli, CLSM 02897-XXI. 22) VICENZA, Valli del Pasubio-Rifugio Balasso, 900 m, on cattle dung in culture, A. Bizzi, 14.5.06, 102.1-Recoaro Terme, CLSM 02897-XXII. 23) VICENZA, Recoaro Terme-Monte Rasta, 950 m, on rabbit dung in culture, F. Doveri, 8.6.07, 102.1-Recoaro Terme, CLSM 02897-XXIII. 24) TRENTO, Dimaro-Malghetta, 1100 m, on cattle dung in culture, F. Doveri, 8.9.07, 042.1-Malé, CLSM 02897-XXIV. 25) TRENTO, Vigo Rendena, 600 m, on cattle dung in culture, F. Doveri, 8.9.07, 059.3-Tione di Trento, CLSM 02897-XXV.
TOTAL 25: cattle 9; horse 8; sheep 3; deer 1; donkey 1; goat 1; rabbit 1; roe deer 1.
REFERENCES: 3-4-12-13-14-15-18-29-36-37-51-61-64-65-78-79-83-84-93-102-103-104-110-114-115-116-128-130-144-148-154-156-157-160-168-170-171-178-182-186-191-192-193-202-205-212.

Schizothecium conicum (Fuckel) N. Lundq.
Symb. Bot. Upsal. 20 (1): 253, 1972. Fig.15

≡ *Cercophora conica* Fuckel, *Jahrb. Nass. Ver. Naturk*. 23-24: 245, 1869.
= ? *Schizothecium fimicolum* Corda, *Icones Fung*. 2: 29, 1838.
= ? *Malinvernia pauciseta* Rabenh., *Herb. Myc.* (ed.II): 526, 1857.
= ? *Sphaeria fimiseda* Fuckel, *Fungi rhenani exsic.*: 2037, 1866.
= *Sordaria curvula* de Bary, *Morph. Physiol. Pilze*: 133, 1866.
= ? *Malinvernia breviseta* Fuckel, *Jahrb. Nass. Ver. Naturk*. 23-24: 243, 1869.
= *Sordaria curvula* de Bary f. *coronata* G. Winter, *Abh. Nat. Ges. Halle* 13 (1): 102, 1873.
= *Podospora curvula* (de Bary) Niessl, *Hedwigia* 22: 156, 1883.
= *Sordaria curvula* de Bary var. *tetraspora* Marchal, *Bull. Soc. Roy. Bot. Belg*. 23 (2): 12, 1884.
= *Sordaria pseudominuta* Speg., *Bol. Acad. Nac. Cienc. Córdoba* 11: 189, 1887.
= *Pleurage curvula* (de Bary) Kuntze, *Rev. Gen. Plant.* 3 (3): 505, 1898.

= *Sordaria hispidula* Speg., *Anal. Mus. Nac. Buenos Aires* 6: 255, 1899.
= *Bombardia curvula* (de Bary) Kirschst., *Krypt. Flora Brandemburg* 7 (2): 183, 1911.
= *Podospora curvula* (de Bary) Niessl var. *charcoviensis* Milovtz., *Trav. Inst. Bot. Univ. Kharkov.* 2: 19, 1937.
= *Schizothecium hispidulum* (Speg.) N. Lundq., *Symb. Bot. Upsal.* 20 (1): 254, 1972.
≡ *Podospora conica* (Fuckel) A. Bell & Mahoney, *Mycologia* 87 (3): 379, 1995.

EXAMINED MATERIAL: 1) ITALY: BRESCIA, Lavenone, 400 m, several semi-immersed specimens on horse dung, G. Medardi, 5.91, 100.4-Vestone, ERB2-SVM-10749. 2) BOLZANO, Trinkstein Marshes, 1600 m, on cattle dung, F. Doveri, 3.9.96, 003.3-Valle Aurina, CLSM 00895 quater. 3) PISA, Calambrone, 0 m, on horse dung in culture, F. Doveri, 26.2.97, 272.1-Marina di Pisa, CLSM 00895 penta. 4) FERRARA, bosco di S. Giustina (Mesola), 0 m, on horse dung in culture, F. Bersan & G. Visentin, 5.97, 187.1-Mesola, CLSM 00895 esa. 5) GORIZIA, isola della Cona, 0 m, on horse dung in culture, F. Bersan, 8.97, 109.1-Duino, AMB 6141. 6) TRENTO, rifugio Panarotta, 1800 m, on horse dung in culture, A. de Vito, 25.9.97, 060.2-Pergine, CLSM 00895 octo. 7) BELLUNO, Forcella Negher (Falcade), 2280 m, on marmot dung in culture, E. Bizio, 2.9.97, 045.1-Cencenighe Agordino, CLSM 00895 ena. 8) ROVIGO, Porto Caleri, 0 m, on horse dung in culture, G. Robich, 22.11.97, 169.2-Contarina, 00895 deca. 9) GROSSETO, Principina terra, 0 m, on horse dung in culture, F. Doveri, 2.4.98, 331.3-Alberese, CLSM 00895-XI. 10) GROSSETO, Principina terra, 0 m, on horse dung in culture, F. Doveri, 2.4.98, 331.3-Alberese, CLSM 00895-XII (a form with 3- and 4-spored asci). 11) UDINE, Sauris di Sopra, 1400 m, on horse dung in culture, G. Medardi, 25.6.98, 030.2-Forni di Sopra, CLSM 00895-XIII. 12) UDINE, forra di Fleons, 1400 m, on cattle dung, F. Bersan & F. Doveri, 26.6.98, 031.1-Rigolato, CLSM 00895-XIV. 13) PORDENONE, Barcis, 700 m, on deer dung in culture, G. Zecchin, 19.6.98, 064.1-Montereale Valcellina, CLSM 00895-XV. 14) UDINE, forra di Fleons, 1400 m, on deer dung in culture, F. Bersan & F. Doveri, 26.6.98, 031.1-Rigolato, CLSM 00895-XVI. 15) COSENZA, Fossiata, 1400 m, on wolf dung in culture, C. Lavorato, 22.5.98, 560.1-Monte Volpintesta, CLSM 00895-XVII. 16) UDINE, Monte Crostis, 2000 m, on cattle dung in culture, F. Bersan, 26.6.98, 031.1-Rigolato, CLSM 00895-XVIII. 17) VICENZA, Recoaro, 1000 m, on sheep dung in culture, A. Bizzi, 10.9.98, 102.1-Recoaro Terme, CLSM 00895-XIX. 18) COSENZA, Rossano, 700 m, on cattle dung in culture, C. Lavorato, 22.12.98, 552.1-Corigliano Calabro, CLSM 00895-XX. 19) BRESCIA, passo del Tonale, 2200 m, on deer dung, G. Robich, 8.9.99, 041.2-Ponte di Legno, CLSM 00895-XXI. 20) BELLUNO, Forcella Negher, 2360 m, on rock goat dung in culture, E. Bizio, 6.9.99, 045.1-Cencenighe Agordino, CLSM 00895-XXII. 21) TRENTO, Malga Giumella (valle di Pejo), 1700 m, on goat dung, M. Zugna, 8.9.99, 041.1-Corno dei Tre Signori, CLSM 00895-XXIII. 22) TRENTO, Malga Palude (val di Rabbi), 1600 m, on cattle dung, C. Gallinari, 8.9.99, 025.3-Rabbi, CLSM 00895-XXIV. 23) TRENTO, Malga Palude (val di Rabbi), 1600 m, on cattle dung, F. Doveri and G. Medardi, 8.9.99, 025.3-Rabbi, CLSM 00895-XXV. 24) VICENZA, Sarego (Monte Cocco), 230 m, on horse dung in culture, A. Bizzi, 125.2-Longare, 125.2-Longare, CLSM 00895-XXVI. 25) VICENZA, Lugo, 300 m, on horse dung in culture, A. Bizzi, 30.10.99, 103.1-Marostica, CLSM 00895-XXVII. 26) VERCELLI, Monte Rosa (lago Gabiet nord), 2500 m, on rock goat dung in culture, G. Robich, 6.9.00, 071.2-Alagna Valsesia, CLSM 00895-XXVIII. 27) VICENZA, Grancona (Monte Caldiero), 230 m, on sheep dung, A. Bizzi, 9.00, 125-3-Montebello, 00895-XXIX. 28) VICENZA, Sarego (Monte Roccolo), 250 m, on sheep dung, A. Bizzi, 9.00, 125.3-Montebello, CLSM 00895-XXX. 29) POTENZA, Sasso di Castalda, 1000 m, on sheep dung in culture, A. Bizzi, 10.11.00, 488.2-Brienza, CLSM 00895-XXXI. 30) POTENZA, Monticchio (loc. laghi di Monticchio), 600 m, on sheep dung in culture, A. Bizzi, 10.11.00, 451.1-Melfi, CLSM 00895-XXXII. 31) BELLUNO, Lozzo (Pian dei Buoi), 1800 m, on hare dung in culture, L. Levorato, 10.9.00, 030.4-Auronzo di Cadore, CLSM 00895-XXXIII. 32) AOSTA, passo Salati, 3000 m, on rock goat dung in culture, L. Levorato, 23.8.00, 071.3-Gressoney la Trinité, CLSM 00895-XXXIV. 33) AOSTA, Bettaforca, 2800 m, on rock goat dung in culture, L. Levorato, 26.8.00, 071.3-Gressoney la Trinité, CLSM 00895-XXXV. 34) COSENZA, Serra Pedace-loc. Silvana Manzio, 1450 m, on cattle dung, C. Lavorato, 2.9.01, 560.1-Monte Volpintesta, CLSM 00895-XXXVI. 35) COSENZA, Manche di Greca, 1100 m, on goat dung in culture, C. Lavorato, 15.2.01, 552.3-Acri, CLSM 00895-XXXVII. 36) LECCE, Vanze, 10 m, on cattle dung in culture, V. Sciurti & F. Doveri, 24.11.01, 513.4-S. Foca, CLSM 00895-XXXVIII. 37) LECCE, Vanze, 10 m, on goat dung in culture, V. Sciurti & F. Doveri, 24.11.01, 513.4-S. Foca, CLSM 00895-XXXIX. 38) L'AQUILA, Campo di Giove, 1100 m, on goat dung in culture, E. Bizio, 20.9.01, 370.3-Cansano, CLSM 00895-XL. 39) VERONA, loc. S. Giorgio, 1500 m, on cattle dung in culture, A. Bizzi, 12.10.01, 102.3-Bosco Chiesanuova, CLSM 00895-XLI. 40) VICENZA, Gallio, loc. Malga Molina, 1600 m, on horse dung in culture, A. Bizzi, 16.8.01, 082.1-Monte Lisser, CLSM 00895-XLII. 41) TREVISO, Borso-Monte Grappa, 1200 m, on roe deer (?) dung in culture, A. Bizzi, 10.8.01, 083.3-Monte Grappa, CLSM 00895-XLIII. 42) VICENZA, Gallio-loc. Malga Molina, 1600 m, on sheep dung in culture, A. Bizzi, 16.8.01, 082.1-Monte Lisser, CLSM 00895-XLIV. 43) COSENZA, Monte Scuro, 1600 m, on horse dung in culture, C. Lavorato, 4.9.01, 560.3-Spezzano della Sila, CLSM 00895-XLV. 44) COSENZA, Monte Scuro, 1600 m, on cattle dung in culture, C. Lavorato, 4.9.01, 560.3-Spezzano della Sila, CLSM 00895-XLVI. 45) COSENZA, loc. Baraccone, 1000 m, on cattle dung in culture, C. Lavorato, 4.11.01, 552.1-Corigliano Calabro, CLSM

00895-XLVII. 46) COSENZA, Fagnano Castello, 800 m, on roe deer dung in culture, C. Lavorato, 23.10.01, 551.4-Fagnano Castello, CLSM 00895-XLVIII. 47) COSENZA, Bocchigliero, 1200 m, on cattle dung in culture, C. Lavorato, 9.9.01, 561.4-Savelli, CLSM 00895-XLIX. 48) MACERATA, Pintura di Bolognola, 1600 m, on cattle dung in culture, F. Doveri, 3.5.02, 325.1-Bolognola, CLSM 00895-L. 49) MACERATA, Piobbico, 500 m, on cattle dung, F. Doveri, 2.5.02, 325.1-Bolognola, CLSM 00895-LI. 50) VENEZIA, Alberoni, 0 m, on horse dung in culture, A. Bizzi, 23.2.02, 148.1-Alberoni, CLSM 00895-LII. 51) TRENTO, Roncone, 850 m, on goat dung in culture, F. Doveri, 11.9.02, 080.4-Roncone, CLSM 00895-LIII. 52) TRENTO, Roncone, 850 m, on sheep dung in culture, F. Doveri, 11.9.02, 080.4-Roncone, CLSM 00895-LIV. 53) BELLUNO, Lorenzago, 900 m, on roe deer dung in culture, A. Bizzi, 22.7.02, 030.3-Pieve di Cadore, CLSM 00895-LV. 54) TRENTO, Regole di Malosco, 900 m, on sheep (?) dung in culture, G. Robich, 5.10.02, 026.3-Fondo, CLSM 00895-LVI. 55) COSENZA, Longobucco-Fossiata, 1400 m, on roe deer dung in culture, C. Lavorato, 25.8.02, 552.2-Longobucco, CLSM 00895-LVII. 56) PISA, S. Ruffino, 50 m, on sheep dung in culture, F. Doveri, 22.3.03, 284.1-Casciana Terme, CLSM 00895-LVIII. 57) LECCO, Concenedo, 920 m, on donkey dung, F. Doveri, 6.6.03, 076.4-Barzio, CLSM 00895-LIX. 58) LECCO, Premana (Piano di Camaggiore), 1190 m, on cattle dung in culture, A. Bizzi, 7.6.03, 055.3-Premana, CLSM 00895-LX. 59) REGGIO CALABRIA, Gambarie, 1300 m, on cattle dung, A. Bizzi, 17.10.03, 602.1-Gambarie, CLSM 00895-LXI. 60) REGGIO CALABRIA, Tazza, 800 m, on cattle dung in culture, F. Doveri, 17.10.03, 602.3-Motta San Giovanni, CLSM 00895-LXII. 61) PORDENONE, Pinedo (Val Settimana), 1200 m, on cattle dung in culture, A. Bizzi, 27.7.03, 047.2-Claut, CLSM 00895-LXIII. 62) PORDENONE, Pinedo (Val Settimana), 1200 m, on deer dung in culture, A. Bizzi, 27.7.03, 047.2-Claut, CLSM 00895-LXIV. 63) BELLUNO, passo Croce d'Aune, 2000 m, on sheep dung , A. Bizzi, 22.6.03, 062.3-Fonzaso, CLSM 00895-LXV. 64) BELLUNO, Campon-Farra d'Alpago, 1000 m, on deer dung in culture, A. Bizzi, 5.7.03, 064.4-Farra d'Alpago, CLSM 00895-LXVI. 65) VERONA, Molina, 800 m, on horse dung, A. Bizzi, 18.9.03, 101.2-Dolcè, CLSM 00895-LXVII. 66) VICENZA, Grancona, on sheep dung, A. Bizzi, 209.4.04, 125.3-Montebello Vicentino, CLSM 00895-LXVIII. 67) CAMPOBASSO, Campitello si Sepino, 1350 m, on horse dung in culture, F. Doveri, 14.10.04, 405.2-Vinchiaturo, CLSM 00895-LXIX. 68) CAMPOBASSO, Vinchiaturo, 500 m, on cattle dung in culture, F. Doveri, 13.10.04, 405.2-Vinchiaturo, CLSM 00895-LXX. 69) TRENTO, Caldonazzo-Malga Melegnun, 1300 m, on cattle dung in culture, F. Doveri, 3.9.04, 081.1-Caldonazzo, CLSM 00895-LXXI. 70) VICENZA, Lestebasse-Malga Malegnon, 1300 m, on roe deer dung in culture, A. Bizzi, 3.9.04, 081.1-Caldonazzo, CLSM 00895-LXXII. 71) COSENZA, S. Fili-loc. Carrera, on sheep dung in culture, C. Lavorato, 16.11.04, 559.1-Rende, CLSM 00895-LXXIII. 72) COSENZA, Longobucco, 1000 m, on sheep dung in culture, C. Lavorato, 10.8.04, 552.2-Longobucco, CLSM 00895-LXXIV. 73) BELLUNO, Canale d'Agordo-loc. Geres, 1380 m, on cattle dung in culture, A. Bizzi, 26.6.05, 045.1-Cencenighe Agordino, CLSM 00895-LXXV. 74) BELLUNO, Canale d'Agordo-loc. Geres, 1380 m, on cattle dung in culture, A. Bizzi, 26.6.05, 045.1-Cencenighe Agordino, CLSM 00895-LXXVI. 75) LIVORNO, Palazzi di Cecina, 0 m, on cattle dung in culture, F. Doveri, 30.4.06, 294.1-Cecina, CLSM 00895-LXXVII. 76) L'AQUILA, Ovindoli, 1350 m, on cattle dung in culture, F. Doveri, 9.6.06, 368.1-Ovindoli, CLSM 00895-LXXVIII. 77) VICENZA, Valdagno-Passo Zovo, 600 m, on horse dung in culture, A. Bizzi, 18.5.06, 102.2-Valdagno, CLSM 00895-LXXIX. 78) VERONA, Bosco Chiesanuova-loc. Padesteria, 1600 m, on cattle dung in culture, A. bizzi, 1.6.06, 102.3-Bosco Chiesanuova, CLSM 00895-LXXX. 79 TRENTO, Monte Baldo, loc. Malga Gambon, 1250 m, on horse dung in culture, A. bizzi, 25.5.06, 080.2-Riva del Garda, CLSM 00895-LXXXI. 80) TRENTO, Brentonico-Monte Baldo, 1400 m, on cattle dung in culture, A. Bizzi, 25.5.06, 080.2-Riva del Garda, CLSM 00895-LXXXII. 81) TRENTO, Folgarida-Forte Kerle, 1300 m, on cattle dung in culture, A. Bizzi, 12.10.06, 081.3-Rovereto, CLSM 00895-LXXXIII. 82) VICENZA, Recoaro Terme-Monte Rasta, 950 m, on rabbit dung in culture, F. Doveri, 8.6.07, 102.1-Recoaro Terme, CLSM 00895-LXXXIV. 83) TRENTO, Folgarida-Malga Folgarida, 1600 m, on cattle dung in culture, F. Doveri, 6.9.07, 042.2-Lago di Tovel, CLSM 00895-LXXXV. 84) TRENTO, Malga di Sadron, 1450 m, on cattle dung in culture, F. Doveri, 8.9.07, 042.1-Malé, CLSM 00895-LXXXVI. 85) TRENTO, Folgarida-Malga Folgarida, 1600 m, on donkey dung in culture, F. Doveri, 6.9.07, 042.2- Lago di Tovel, CLSM 00895-LXXXVII.

TOTAL 85: cattle 29; horse 18; sheep 13; deer 5; goat 5; roe deer 5; rock goat 4; donkey 2; hare 1; marmot 1; rabbit 1; wolf 1.

REFERENCES: 9-11-13-15-18-20-28-30-31-33-37-42-48-49-59-62-64-76-78-80-83-84-86-93-101-109-110-114-122-128-130-135-138-144-149-160-164-172-177-181-182-186-192-193-195-199-205-212.

Podospora cupiformis Cailleux

Cah. Maboké 7 (1) : 8, 1969.

REFERENCES: 34-64-88.

Podospora curvicolla (G. Winter) Niessl

Hedwigia 22: 156, 1883. Figs.16-17

≡ *Sordaria curvicolla* G.Winter, Hedwigia 10: 161, 1871.
≡ *Philocopra curvicolla* (G. Winter) Sacc., Syll. Fung. 1: 250, 1882.

≡ *Pleurage curvicolla* (G. Winter) Kuntze, Rev. Gen. Plant. 3 (3): 505, 1898.
≡ *Bombardia curvicolla* (G. Winter) Mig., Thome's Krypt. Fl. 10 (1): 128, 1912.

EXAMINED MATERIAL: ITALY: 1) MILANO, parco di Monza, 150 m, about fifteen gregarious, almost fully immersed specimens, on wild rabbit dung, F. Doveri, 26.5.00, 118.1-Monza, CLSM 027.00. 2) RAVENNA, Marina Romea, 0 m, on roe deer dung, F. Doveri, 6.4.01, 223.1-Marina Romea, CLSM 027.00 bis. 3) RAVENNA, pineta di Ponte Bottole, 0 m, on fallow deer dung in culture, A. Bizzi, 11.11.02, 223.1-Marina Romea, CLSM 027.00 ter. 4) VICENZA, Recoaro Terme, 1000 m, on rabbit dung in culture, A. Bizzi, 22.5.04, 102.2-Valdagno, CLSM 027.00 quater. 5) VENEZIA, Ca'Savio, 0 m, on hare dung in culture, L. Levorato, 24.3.06, 128.3-Venezia, CLSM 027.00 esa. 6) VICENZA, Recoaro Terme-Monte Rasta, 950 m, on rabbit dung in culture, F. Doveri, 8.6.07, 102.1-Recoaro Terme, CLSM 027.00 epta.
TOTAL 6: rabbit 3; hare 1; fallow deer 1; roe deer 1.
REFERENCES: 15-18-36-37-59-64-78-83-84-93-94-95-102-114-122-128-130-156-157-160-171-177-187-192-195-203-205-208-212.

Schizothecium curvisporum (Cain) N. Lundq.
Symb. Bot. Upsal. 20: 334, 1972.

≡ *Sordaria curvispora* Cain in Cain & Groves, Can. J. Res. 26: 492, 1948.
≡ *Pleurage curvispora* (Cain) C. Moreau, Encycl. Mycol. 25: 256, 1953.
≡ *Podospora curvispora* (Cain) Cain, Can. J. Bot. 40: 459, 1962.

REFERENCES: 31-36-38-39-64-88-102-114-128-130.

Schizothecium curvuloides (Cain) L. Cai in Cai et al. var. *curvuloides*
Fungal Diversity 19: 14, 2005.

≡ *Podospora curvuloides* Cain, Can. J. Bot. 40 : 453, 1962.

REFERENCES: 15-18-20-31-38-64-102-128-174-203-205.

Schizothecium curvuloides (Cain) L. Cai var. *megasporum* Doveri & Coué
Doc. Mycol., in press. Figs.18-19

REFERENCES: 69.

Podospora dactylina N. Lundq.
Svensk Bot. Tidskr. 64 (4): 414, 1970.

REFERENCES: 15-18-60-64-113-114.

Schizothecium dakotense (Griffiths) N. Lundq.
Symb. Bot. Upsal. 20 (1): 254, 1972. Figs.20-21

≡ *Pleurage dakotensis* Griffiths, Mem. Torrey Bot. Club 11: 87, 1901.
≡ *Philocopra dakotensis* (Griffiths) Sacc., Syll. Fung. 17: 607, 1905.
≡ *Podospora dakotensis* (Griffiths) Mirza & Cain, Can. J. Bot. 47: 2016, 1969.

EXAMINED MATERIAL: ITALY: 1) RAVENNA, Lido di Savio, 0 m, about ten gregarious, semi-immersed specimens on wild rabbit dung in culture, Carchia, 6.4.01, 241.4-Lido di Savio, CLSM 014.01. 2) RAVENNA, Lido di Classe, 0 m, on wild rabbit dung in culture, F. Doveri, 6.4.01, 241.3-Cervia, CLSM 014.01 bis. 3) LECCO, Premana (Piano di Camaggiore), 1190 m, on cattle dung in culture, A. Bizzi, 7.6.03, 055.3-Premana, CLSM 014.01 ter. 4) LECCO, Premana (Piano di Camaggiore), 1190 m, on goat dung in culture, A. Bizzi, 7.6.03, 055.3-Premana, CLSM 014.01 quater. 5) BELLUNO, Campon-Farra d'Alpago, 1000 m, on deer dung in culture, A. Bizzi, 5.7.03, 064.4-Farra d'Alpago, CLSM 014.01 penta. 6) VENEZIA, Ca'Savio, 0 m, on hare dung in culture, L. Levorato, 24.3.06, 128.3-Venezia, CLSM 014.01-esa. 7) VICENZA, Recoaro Terme-Monte Rasta, 950 m, on rabbit dung in culture, F. Doveri, 8.6.07, 102.1-Recoaro Terme, CLSM 014.01-epta. 8) TRENTO, Folgarida-Malga Folgarida, 1600 m, on cattle dung in culture, F. Doveri, 6.9.07, 042.2-Lago di Tovel, CLSM 014.01-octo.
TOTAL 8: cattle 2; wild rabbit 2; deer 1; goat 1; hare 1; rabbit 1.
REFERENCES: 10-20-31-36-51-64-78-83-84-114-128-130-144-155-162-199-205.

Podospora dasypogon N. Lundq.
Symb. Bot. Upsal. 20 (1): 157, 1972. Figs.22-23

TOTAL 1: cattle.

REFERENCES: 64-114.

Podospora decidua Cailleux
Cah. Maboké 7 (2): 98, 1969.

REFERENCES: 35-36-64-88.

Podospora decipiens (G. Winter ex Fuckel) Niessl
Hedwigia 22: 156, 1883. Figs.24-25

≡ *Sordaria decipiens* G. Winter, Bot. Zeit. 31: 483, 1873.
≡ *Sordaria decipiens* Fuckel, Jahrb. Nass. Ver. Naturk. 2 (27-28): 44, 1873.
= *Podospora pleiospora* f. *paucispora* Marchal in Rabenh.-Winter, Fungi Eur. Extraeur. Exs. 3341, 1885 (nom. nud.).
≡ *Pleurage decipiens* (G. Winter ex Fuckel) Kuntze, Rev. Gen. Plant. 3 (3): 505, 1898.
≡ *Bombardia decipiens* (G. Winter ex Fuckel) Kirschst. Krypt.-Fl. Mark Brandemb. 7: 182, 1911.

EXAMINED MATERIAL: ITALY: 1) FERRARA, bosco di S. Giustina (Mesola), 0 m, dozens of gregarious, semi-immersed specimens on horse dung in culture, F. Bersan & G. Visentin, 5.95, 187.1-Mesola, MCVE 590. 2) GORIZIA, isola della Cona, 0 m, on horse dung in culture, F. Bersan, 8.97, 109.1-Duino, AMB 6140. 3) TRENTO, Malga Montagna Grande, 1700 m, on leporid dung in culture, G. Medardi, 26.9.97, 060.2-Pergine, CLSM 01397 ter. 4) TRENTO, rifugio Panarotta, 1800 m, on cattle dung in culture, A. De Vito, 25.9.97, 060.2-Pergine, CLSM 01397 quater. 5) TRENTO, Malga Montagna Grande, 1700 m, on horse dung in culture, F. Doveri, 26.9.97, 060.2-Pergine, CLSM 01397 penta. 6) BELLUNO, Forcella Negher, 2280 m, on marmot dung in culture, E. Bizio, 2.9.97, CLSM 01397 esa. 7) COSENZA, Orsomarso, 1300 m, on cattle dung in culture, C. Lavorato, 17.5.98, 533.2-Mormanno, CLSM 01397 epta. 8) UDINE, Forra di Fleons, 1400 m, on deer dung in culture, F. Bersan & F. Doveri, 26.6.98, 031.1-Rigolato, CLSM 01397 octo. 9) COSENZA, Orsomarso (Parco Nazionale del Pollino), 1300 m, on horse dung in culture, C. Lavorato, 17.5.98, 533.2-Mormanno, CLSM 01397 ena. 10) UDINE, forra di Fleons, 1400 m, on cattle dung, F. Bersan & F. Doveri, 26.6.98, 031.1-Rigolato, CLSM 01397 deca. 11) MESSINA, Novara di Sicilia (Loc. Serra Mandrazze), on cervine dung, G. Robich, 11.11.98, 613.4-Francavilla di Sicilia, CLSM 01397-XI. 12) CATANIA, Parco dell'Etna, 1800 m, on sheep dung in culture, A. Bizzi, 9.11.98, 612.2-Randazzo, CLSM 01397-XII. 13) COSENZA, S. Demetrio Corone, 600 m, on hare dung in culture, C. Lavorato, 5.11.98, 552.4-S. Demetrio Corone, CLSM 01397-XIII. 14) COSENZA, Rossano, 700 m, on wild pig dung in culture, C. Lavorato, 22.12.98, 552.1-Corigliano Calabro, CLSM 01397-XIV. 15) COSENZA, Rossano, 700 m, on cattle dung, C. Lavorato, 22.12.98, 552.1-Corigliano Calabro, CLSM 01397-XV. 16) FERRARA, S. Giustina, 0 m, on deer dung, A. Bizzi & G. Zecchin, 17.4.99, 187.1-Mesola, CLSM 01397-XVI. 17) BRESCIA, passo del Tonale, 2200 m, on deer dung, G. Robich, 8.9.99, 041.2-Ponte di Legno, CLSM 01397-XVII. 18) BRESCIA, passo del Tonale, 2200 m, on cattle dung, P. Cugildi, 8.9.99, 041.2-Ponte di Legno, CLSM 01397-XVIII. 19) TRENTO, Malga Palude (Val di Rabbi), 1600 m, on cattle dung, F. Doveri & G. Medardi, 8.9.99, 025.3-Rabbi, CLSM 01397-XIX. 20) VICENZA, Nogarole Vicentino (Monte Faldo), 600 m, on horse dung in culture, A. Bizzi, 1.9.99, 124.1-Arzignano, CLSM 01397-XX. 21) VICENZA, Recoaro (Monte Rasta), 1000 m, on roe deer dung in culture, A. Bizzi, 9.9.99, 102.2-Valdagno, CLSM 01397-XXI. 22) AOSTA, passo Salati, 2970 m, on rock goat dung in culture, L. Levorato, 21.8.99, 071.3-Gressoney la Trinité, CLSM 01397-XXII. 23) NUORO, Villanova Strisáili (loc. bosco di S. Barbara), 850 m, on pig dung in culture, A. Bizzi, 11.11.99, 531.4- Villanova Strisáili, CLSM 01397-XXIII. 24) VERONA, Roncà (Monte Calvarina), 600 m, on sheep dung in culture, A. Bizzi, 25.9.99, 124.1-Arzignano, CLSM 01397-XXIV. 25) CAGLIARI, Villasimíus, 100 m, on sheep dung in culture, A. Bizzi, 9.11.99, 567.1-Villasimíus, CLSM 01397-XXV. 26) PISA, parco di S. Rossore, 0 m, on fallow deer dung in culture, F. Doveri, 5.3.00, 272.2-Migliarino, CLSM 01397-XXVI. 27) VICENZA, Grancona (Monte Caldiero), 230 m, on sheep dung in culture, A. Bizzi, 9.00, 125.3-Montebello, CLSM 01397-XXVII. 28) VICENZA, Sarego (Monte Giaretta), 250 m, on horse dung in culture, A. Bizzi, 10.00, 125.3-Montebello, CLSM 01397-XXVIII. 29) POTENZA, Sasso di Castalda, 1000 m, on sheep dung in culture, A. Bizzi, 10.11.00, 488.2-Brienza, CLSM 01397-XXIX. 30) POTENZA, Monticchio (loc. laghi di Monticchio), 600 m, on sheep dung in culture, A. Bizzi, 10.11.00, 451.1-Melfi, CLSM 01397-XXX. 31) AOSTA, rifugio Q. Sella, 3100 m, on hare dung in culture, L. Levorato, 26.8.00, 071.3-Gressoney la Trinité, CLSM 01397-XXXI. 32) RAVENNA, Marina Romea, 0 m, on horse dung in culture, F. Doveri, 6.4.01, 223.1-Marina Romea, CLSM 01397-XXXII. 33) VENEZIA, forte di S. Andrea, 0 m, on goat dung, E. Bizio, 3.6.01, 128.3-Venezia, CLSM 01397-XXXIII. 34) COSENZA, Serra Pedace-loc. Silvana Manzio, 1450 m, on cattle dung in culture, C. Lavorato, 2.9.01, 560.1-Monte Volpintesta, CLSM 01397-XXXIV. 35) LECCE, Punta Prosciutto, 0 m, on sheep dung in culture, P. Franchi & M. Marchetti, 24.11.01, 511.3-Torre Colimena, CLSM 01397-XXXV. 36) LECCE, Vanze, 10 m, on horse dung in culture, V. Sciurti & F. Doveri, 24.11.01, 513.4-S. Foca, CLSM 01397-XXXVI. 37) LECCE, scuderie di Lizzanello, 40 m, on horse dung in culture, V. Sciurti & F. Doveri, 24.11.01, 512.1-Lecce,

CLSM 01397-XXXVII. 38) LECCE, Vanze, 10 m, on cattle dung in culture, V. Sciurti & F. Doveri, 24.11.01, 513.4-S. Foca, CLSM 01397-XXXVIII. 39) L'AQUILA, Campo di Giove, 1100 m, on goat dung in culture, E. Bizio, 20.9.01, 370.3-Cansano, CLSM 01397-XXXIX. 40) VERONA, loc. S. Giorgio, 1500 m, on cattle dung in culture, A. Bizzi, 12.10.01, 102.3-Bosco Chiesanuova, CLSM 01397-XL. 41) VICENZA, Gallio-Malga Molina, 1600 m, on sheep dung in culture, A. Bizzi, 16.8.01, 082.1-Monte Lisser, CLSM 01397-XLI. 42) VICENZA, Gallio, 1400 m, on horse dung in culture, A. Bizzi, 16.8.01, 082.1-Monte Lisser, CLSM 01397-XLII. 43) TREVISO, Monte Grappa-Campo Croce, 1200 m, on sheep dung in culture, A. Bizzi, 10.8.01, 083.3-Monte Grappa, CLSM 01397-XLIII. 44) COSENZA, Mount Scuro, 1600 m, on horse dung in culture, C. Lavorato, 4.9.01, 560.3-Spezzano della Sila, CLSM 01397-XLV. 45) COSENZA, Monte Scuro, 1600 m, on cattle dung in culture, C. Lavorato, 4.9.01, 560.3-Spezzano della Sila, CLSM 01397-XLVI. 46) COSENZA, Fagnano Castello, 800 m, on roe deer dung in culture, C. Lavorato, 23.10.01, 551.4-Fagnano Castello, CLSM 01397-XLVII. 47) COSENZA, Bocchigliero, 1200 m, on cattle dung in culture, C. Lavorato, 9.9.01, 561.4-Savelli, CLSM 01397-XLVIII. 48) MACERATA, Macchia di Fuoco, 550 m, on horse dung, A. Bizzi, 3.5.02, 313.1-S. Ginesio, CLSM 01397-XLIX. 49) MACERATA, Pintura di Bolognola, 1600 m, on cattle dung in culture, F. Doveri, 3.5.02, 325.1-Bolognola, CLSM 01397-L. 50) MACERATA, Pintura di Bolognola, 1600 m, on horse dung in culture, F. Doveri, 3.5.02, 325.1-Bolognola, CLSM 01397-LI. 51) MACERATA, Pintura di Bolognola, 1600 m, on cattle dung in culture, F. Doveri, 3.5.02, 325.1-Bolognola, CLSM 01397-LII. 52) MACERATA, Piobbico, 500 m, on cattle dung in culture, F. Doveri, 2.5.02, 325.1-Bolognola, CLSM 01397-LIII. 53) MACERATA, Pintura di Bolognola, 1600 m, on wild rabbit dung in culture, F. Doveri, 3.5.02, 325.1-Bolognola, CLSM 01397-LIV. 54) MACERATA, Sasso Tetto, 1600 m, on sheep dung in culture, F. Doveri, 3.5.02, 325.1-Bolognola, CLSM 01397-LV. 55) TRENTO, Roncone, 850 m, on goat dung in culture, F. Doveri, 11.9.02, 080.4-Roncone, CLSM 01397-LVI. 56) VICENZA, Tonezza-Malga Melegnon, 1400 m, on cattle dung, A. Bizzi, 4.7.02, 081.2-Castana, CLSM 01397-LVII. 57) BELLUNO, Lorenzago, 900 m, on roe deer dung in culture, A. Bizzi, 22.7.02, 030.3-Pieve di Cadore, CLSM 01397-LVIII. 58) COSENZA, Acri, 1000 m, on wild pig dung, C. Lavorato, 10.5.02, 552.3-Acri, CLSM 01397-LIX. 59) LECCO, Concenedo, 920 m, on donkey dung, F. Doveri, 6.6.03, 076.4-Barzio, CLSM 01397-LX. 60) LECCO, Concenedo, 920 m, on cattle dung in culture, F. Doveri, 6.6.03, 076.4-Barzio, CLSM 01397-LXI. 61) LECCO, Premana (Piano di Camaggiore), 1190 m, on cattle dung in culture, A. Bizzi, 7.6.03, 055.3-Premana, CLSM 01397-LXII. 62) LECCO, Premana (Piano di Camaggiore), 1190 m, on goat dung in culture, A. Bizzi, 7.6.03, 055.3-Premana, CLSM 01397-LXIII. 63) LECCO, Premana (Piano di Camaggiore), 1190 m, on horse dung in culture, A. Bizzi, 7.6.03, 055.3-Premana, CLSM 01397-LXIV. 64) REGGIO CALABRIA, Tazza, 800 m, on cattle dung in culture, F. Doveri, 17.10.03, 602.3-Motta San Giovanni, CLSM 01397-LXV. 65) REGGIO CALABRIA, Gambarie, 1300 m, on cattle dung, A. Bizzi, 17.10.03, 602.1-Gambarie, CLSM 01397-LXVI. 66) UDINE, Piani Montasio, 1800 m, on marmot dung in culture, L. Levorato, 2.7.03, 033.3-Saletto, CLSM 01397-LXVII. 67) BELLUNO, passo Croce d'Aune, 2000 m, on roe deer dung, A. Bizzi, 22.6.03, 062.3-Fonzaso, CLSM 01397-LXVIII. 68) BELLUNO, Campon-Farra d'Alpago, 1000 m, on deer dung in culture, A. Bizzi, 5.7.03, 064.4-Farra d'Alpago, CLSM 01397-LXIX. 69) BELLUNO, passo Croce d'Aune, 2000 m, on sheep dung in culture, A. Bizzi, 22.6.03, 062.3-Fonzaso, CLSM 01397-LXX. 70) VERONA, Molina, 800 m, on horse dung in culture, A. Bizzi, 18.9.03, 101.2-Dolcè, CLSM 01397-LXXI. 71) Campobasso, Vinchiaturo, 500 m, on sheep dung, F. Doveri, 13.10.04, 405.2-Vinchiaturo, CLSM 01397-LXXIV. 72) Campobasso, S. Massimo, 650 m, on roe deer dung in culture, A. Bizzi, 14.10.04, 405.3-Boiano, CLSM 01397-LXXV. 73) TRENTO, Malga Melegnun, 1300 m, on cattle dung in culture, F. Doveri, 3.9.04, 081.1-Caldonazzo, CLSM 01397-LXXVI. 74) COSENZA, S. Fili-loc. Carrera, on sheep dung in culture, C. Lavorato, 16.11.04, CLSM 01397-LXXVII. 75) COSENZA, Longobucco-loc. Cozzo Pica, 1000 m, on sheep dung in culture, C. Lavorato, 10.8.04, 552.2-Longobucco, CLSM 01397-LXXVIII. 76) VICENZA, Sarego-Monte cocco, 250 m, on sheep dung in culture, A. Bizzi, 13.4.05, 125.2-Longare, CLSM 01397-LXXIX. 77) CUNEO, Viola-loc. il Colletto, 1100 m, on cattle dung, A. Bizzi, 14.9.05, 227.2-Pamperato, CLSM 01397-LXXX. 78) VICENZA, Grancona-Monte Caldiero, on sheep dung, A. Bizzi, 7.8.05, 125.3-Montebello Vicentino, CLSM 01397-LXXXI. 79) UDINE, passo Pura, 1500 m, on cattle dung, F. Bersan, 26.6.05, 031.3-Ampezzo, CLSM 01397-LXXXII. 80) LIVORNO, Palazzi di Cecina, 0 m, on cattle dung in culture, F. Doveri, 30.4.06, 294.1-Cecina, CLSM 01397-LXXXIII. 81) L'AQUILA, Piani del Sirente, 1050 m, on cattle dung, F. Doveri, 9.6.06, 368.1-Ovindoli, CLSM 01397-LXXXIV. 82) L'AQUILA, Ovindoli, 1350 m, on cattle dung in culture, F. Doveri, 9.6.06, 368.1-Ovindoli, CLSM 01397-LXXXV. 83) VENEZIA, Ca'Savio, 0 m, on hare dung in culture, L. Levorato, 24.3.06, 128.3-Venezia, CLSM 01397-LXXXVI. 84) VENEZIA, Chioggia-bosco Nordio, 0 m, on fallow deer dung in culture, L. Levorato, 8.4.06, 148.2-Chioggia, CLSM 01397-LXXXVII. 85) VICENZA, Valli del Pasubio-rifugio Bolasso, 900 m, on cattle dung in culture, A. Bizzi, 14.5.06, 102.1-Recoaro Terme, CLSM 01397-LXXXVIII. 86) VERONA, Erbezzo-Parco della Lessinia, 1550 m, on horse dung in culture, A. Bizzi, 1.6.06, 102.3-Bosco Chiesanuova, CLSM 01397-LXXXIX. 87) VERONA, loc. Podesteria, 1600 m, on cattle dung in culture, F. Doveri, 1.6.06, 102.3-Bosco Chiesanuova, CLSM 01397-XC. 88) TRENTO, Brentonico-Monte Baldo, 1400 m, on cattle dung in culture, A. Bizzi, 25.5.06, 080.2-Riva del Garda, CLSM 01397-XCI. 89) VERONA, Passo del Branchetto, 1600 m, on cattle dung in culture, A. Bizzi, 1.6.06, 102.3-Bosco Chiesanuova, CLSM 01397-XCII. 90) FERRARA, Mesola-loc. Lido di Volano, 0 m, on horse dung, A. Bizzi, 9.11.06, 187.1-Mesola,

CLSM 01397-XCIII. 91) TRENTO, Folgaria-Forte Kerle, 1300 m, on cattle dung in culture, A. Bizzi, 12.10.06, 081.3-Rovereto, CLSM 01397-XCIV. 92) VICENZA, Recoaro Terme-Monte Rasta, 950 m, on rabbit dung in culture, F. Doveri, 8.6.07, 102.1-Recoaro Terme, CLSM 01397-XCV. 93) VICENZA, Recoaro Terme-Monte Rasta, 950 m, on sheep dung in culture, F. Doveri, 8.6.07, 102.1-Recoaro Terme, CLSM 01397-XCVI. 94) VICENZA, Recoaro Terme-Monte Rasta, 950 m, on sheep dung in culture, F. Doveri, 8.6.07, 102.1-Recoaro Terme, CLSM 01397-XCVII. 95) TRENTO, Folgarida-Malga Folgarida, 1600 m, on cattle dung in culture, F. Doveri, 6.9.07, 042.2-Lago di Tovel, CLSM 01397-XCVIII. 96) TRENTO, Dimaro-Malga di Sadron, 1450 m, on cattle dung in culture, F. Doveri, 8.9.07, 042.1-Malé, CLSM 01397-XCIX. 97) TRENTO, Dimaro-Malghetta, 1100 m, on cattle dung in culture, F. Doveri, 8.9.07, 042.1-Malé, CLSM 01397-C.
TOTAL 97: cattle 34; sheep 18; horse 17; deer 5; roe deer 5; goat 4; hare 4; fallow deer 2; marmot 2; donkey 1; pig 1; rabbit 1; rock goat 1; wild pig 1; wild rabbit 1.
REFERENCES: 3-4-9-10-13-15-18-23-29-32-37-46-61-62-64-67-77-78-79-83-84-86-93-101-102-103-107-110-114-115-122-128-130-135-144-155-157-171-188-191-192-193-195-204-205-210-212.

Podospora deltoides R.S. Khan & J.C. Krug, in Krug & Khan
Can. J. Bot. 67: 1176, 1989.

REFERENCES: 64-102.

Podospora deropodalis R.S. Khan & Cain
Can. J. Bot. 50: 1654, 1972.

REFERENCES: 64-65-97-102.

Podospora didyma Mirza & Cain
Can. J. Bot. 47: 2018, 1969.

REFERENCES: 18-64-128.

Podospora dimorpha A. Bell
Australasian Mycologist 23 (2): 41, 2004.

REFERENCES: 17.

Podospora dolichopodalis Mirza & Cain
Can. J. Bot. 47: 2018, 1969.

REFERENCES: 18-64-80-115-128-175-205.

Schizothecium dubium (E.C. Hansen) N. Lundq.
Symb. Bot. Upsal. 20: 254, 1972.

≡ *Sordaria dubia* E. C. Hansen, Vidensk. Meddel. Naturhist. Foren. 337, 1876.
≡ *Podospora dubia* (E.C. Hansen) Niessl, Hedwigia 22: 156, 1883.
= *Sordaria linguiformis* Cain, Univ. Toronto Stud. Mycol. Ser. 38: 42, 1934.
= *Schizothecium linguiforme* (Cain) L. Cai in Cai et al., Fungal Diversity 19: 15, 2005.

REFERENCES: 31-37-64-90-114-120-128-135-155-211.

Podospora ellisiana (Griffiths) Mirza & Cain
Can. J. Bot. 47: 2020, 1969.

≡ *Pleurage ellisiana* Griffiths, Mem. Torr. Bot. Cl. 11: 72, 1901.

REFERENCES: 9-15-18-64-83-84-114-128-130-144-207.

Podospora eminens (Cain) Cain
Can J. Bot. 40 : 459, 1962.

≡ *Sordaria eminens* Cain, Univ. Toronto Stud. Mycol. Ser. 38: 51, 1934.

REFERENCES: 37-38-64-114-128.

Podospora euphratica Abdullah
Nova Hedwigia 44 (3-4): 345, 1987.

REFERENCES: 1-64-65.

Podospora excentrica N. Lundq.
Symb. Bot. Upsal. 20 (1): 176, 1972. Fig.26

EXAMINED MATERIAL: ITALY (?), five gregarious, semi-immersed specimens, on kangaroo (*Macropus sp.*) dung in culture, C. Rossi, CLSM 016.00.
TOTAL 1: kangaroo.
REFERENCES: 15-18-59-60-64-114-136-152.

Podospora fabiformis A. Bell & Mahoney in Bell
CBS Biodiv. Ser. 3: 60, 2005.

REFERENCES: 18.

Podospora fibrinocaudata R.S. Khan & J.C. Krug
Mycologia 83 (6): 818, 1991.

REFERENCES: 64-99.

Podospora fimiseda (Ces. & De Not.) Niessl
Hedwigia 22: 156, 1883. Figs.27-28

≡ *Sordaria fimiseda* Ces. & De Not., Comm. Soc. Critt. Ital. 1: 226, 1863.
= *Sphaeria equina* Fr. in Mont., Ann. Sci. Nat., 2a Sér. Bot. 1: 337, 1834 (nom. illeg.).
= *Podospora fimicola* (Corda) Ces., *s.* Ces. in Rabenh., Bot. Zeit. 14: 429, 1856.
≡ *Cercophora fimiseda* (Ces. & De Not.) Fuckel, Jahrb. Nass. Ver. Naturk. 23-24: 244, 1870.
≡ *Sphaeria fimiseda* (Ces. & De Not.) Cooke & Berk., Int. Sci. Ser. 14: 134, 1875.
= *Hypocopra equina* (Fr.) Sacc., Syll. Fung. 1: 247, 1882.
= *Sordaria equina* (Fr.) Cooke, Grevillea 16: 78, 1887.
= *Pleurage equina* (Fr.) Kuntze, Rev. Gen. Plant. 3 (3): 505, 1898.
= *Pleurage fimicola* (Corda) Kuntze, Rev. Gen. Plant. 3 (3): 504, 1898.
≡ *Pleurage fimiseda* (Ces. & De Not.) Griffiths, Mem. Torrey Bot. Club 11: 69, 1901.
≡ *Bombardia fimiseda* (Ces. & De Not.) Kirschst., Krypt. Flora Brandemburg 7 (2): 185, 1911.

EXAMINED MATERIAL: ITALY: 1) LIVORNO, Botro delle Fontanelle, 200 m, about thirty gregarious, superficial specimens on cattle dung in culture, F. Doveri, 6.95, 284.4-Collesalvetti, MCVE 483. 2) BRESCIA, Mura,650 m, on cattle dung, G. Medardi, 8.96, 100.4-Vestone, CLSM 01995 bis. 3) TRENTO, Malga Montagna Grande, 1000 m, on horse dung in culture, F. Doveri, 25.9.97, 060.2-Pergine, CLSM 01995 ter. 4) TRENTO, rifugio Panarotta, 1800 m, on cattle dung, A. De Vito, 25.9.97, 060.2-Pergine, CLSM 01995 quater. 5) BERGAMO, Dossena, on cattle dung, A. De Vito, 21.8.97, 077.3-S. Pellegrino Terme, CLSM 01995 penta. 6) VICENZA, Lugo, 350 m, on horse dung in culture, A. Bizzi, 29.10.99, 103.1-Marostica, CLSM 01995 esa. 7) MACERATA, Macchia di Fuoco, 550 m, on horse dung, A. Bizzi, 3.5.02, 313.1-S. Ginesio, CLSM 01995 epta. 8) MACERATA, Pintura di Bolognola, 1600 m, on cattle dung in culture, F. Doveri, 3.5.02, 325.1-Bolognola, CLSM 01995 octo. 9) REGGIO CALABRIA, Gambarie, 1300 m, on cattle dung in culture, A. Bizzi, 17.10.03, 602.1-Gambarie, CLSM 01995 ena. 10) PORDENONE, Pinedo (Val Settimana), 1200 m, on cattle dung in culture, A. Bizzi, 27.7.03, 047.2-Claut, CLSM 01995 deca. 11) CAMPOBASSO, Campitello di Sepino, 1350 m, on horse dung in culture, F. Doveri, 14.10.04, 405.2-Vinchiaturo, CLSM 01995-XI. 12) TRENTO, Malga Melegnun, 1300 m, on cattle dung in culture, F. Doveri, 3.9.04, 081.1-Caldonazzo, CLSM 01995-XII. 13) COSENZA, S. Fili-loc. Carrera, on sheep dung in culture, C. Lavorato, 16.11.04, 559.1-Rende, CLSM 01995-XIII. 14) COSENZA, Longobucco-loc. Cozzo Pica, 1000 m, on sheep dung in culture, C. Lavorato, 10.8.04, 552.2-Longobucco, CLSM 01995-XIV. 15) CUNEO, Viola-loc. il Colletto, 1100 m, on cattle dung, A. Bizzi, 14.9.05, 227.2-Pamperato, CLSM 01995-XV. 16) TRENTO, Dimaro-Malghetta, 1100 m, on hare dung in culture, F. Doveri, 8.9.07, 042.1-Malé, CLSM 01995-XVI.
TOTAL 16: cattle 9; horse 4; sheep 2; hare 1.
REFERENCES: 9-13-15-18-22-33-37-50-58-59-61-62-64-67-70-73-76-78-79-83-84-93-101-102-114-128-130-132-135-143-144-164-171-177-191-192-195-204-205-212.

Schizothecium formosanum (Y.-Z. Wang) L. Cai in Cai et al.
Fungal Diversity 19: 14, 2005.

≡ *Podospora formosana* Y.-Z. Wang, Mycotaxon 76: 383, 2000.

REFERENCES: 31-64-205.

Podospora gigantea Mirza & Cain
Can. J. Bot. 47: 2022, 1969. Figs.29-30

EXAMINED MATERIAL: ITALY: 1) LIVORNO, Botro delle Fontanelle, 200 m, about ten gregarious, fully immersed (except for the upper portion of the neck) specimens, on cattle dung, F. Doveri, 26.12.95, 284.4-Collesalvetti, Herbarium Horti Botanici Pisani PI-HM-A1.
TOTAL 1: cattle.
REFERENCES: 18-64-114-115-128-141.

Podospora globosa (Massee & E.S. Salmon) Cain
Can. J. Bot. 40: 460, 1962. Fig.31

≡ *Sordaria globosa* Massee & E.S. Salmon, *Ann. Bot.* 15: 334, 1901.

EXAMINED MATERIAL: ITALY: 1) COSENZA, Corigliano Calabro (Contrada Tenimento), 300 m, dozens of gregarious or crowded, almost superficial specimens, on rabbit dung in culture, C. Lavorato, 16.5.98, 552.1-Corigliano Calabro, CLSM 05498. 2) TRENTO, Vigo Rendena, 600 m, on cattle dung in culture, F. Doveri, 8.9.07, 059.3-Tione di Trento, CLSM 05498 bis.
TOTAL 2: cattle 1; rabbit 1.
REFERENCES: 15-37-59-60-64-114-122-199-201-204-205.

Schizothecium glutinans (Cain) N. Lundq.
Symb. Bot. Upsal. 20 (1): 254, 1972. Fig.32

≡ *Sordaria glutinans* Cain, Univ. Toronto Stud., Biol. Ser. 38 : 40, 1934.
≡ *Pleurage glutinans* (Cain) C. Moreau, Encycl. Mycol. 25: 237, 1953.
≡ *Podospora glutinans* (Cain) Cain, Can. J. Bot. 40: 460, 1962.

EXAMINED MATERIAL: ITALY: 1) VICENZA, Posina, ?, on roe deer dung in culture, A. Bizzi, 25.5.02, 081.2-Castana, CLSM 022.02.
TOTAL 1 : roe deer.
REFERENCES: 9-11-15-18-20-23-31-64-78-114-128.

Podospora granulostriata N. Lundq.
Symb. Bot. Upsal. 20 (1): 187, 1972. Fig.33

EXAMINED MATERIAL: ITALY: 1) TRENTO, Bersone, one semi-immersed specimen, on cervine dung, G. Medardi & C. Gallinari, 27.2.00, 079.1-Pieve di Bono, CLSM 021.00. 2) TRENTO, Regole di Malosco, 900 m, on sheep (?) dung in culture, G. Robich, 5.10.02, 026.3-Fondo, CLSM 021.00 bis. 3) BELLUNO, Croce d'Aune pass, 2000 m, on roe deer dung in culture, A. Bizzi, 22.6.03, 062.3-Fonzaso, CLSM 021.00 ter.
TOTAL 3: deer 1; roe deer 1; sheep (?) 1.
REFERENCES: 64-93-114-213.

Podospora gwynne-vaughaniae (W.M. Page) Cain
Can. J. Bot. 40: 460, 1962.

≡ *Pleurage gwynne-vaughaniae* W.M. Page, Trans. Brit. mycol. Soc. 43 (3): 506, 1960.

REFERENCES: 38-64-65-128-140.

Podospora horridula (Sacc. in Barbey) Dennis & S. Francis in Francis & Sparrow
Trans. Brit. Mycol. Soc. 82 (2): 380, 1884.

≡ *Rosellinia horridula* Sacc. in Barbey, Fl. Sardoae compend.: 248, 1884.

REFERENCES: 64-75-88-161.

Podospora hyalopilosa (R. Stratton) Cain
Can. J. Bot. 40: 460, 1962.

≡ *Pleurage hyalopilosa* R. Stratton, Ohio Biol. Surv. 3 (2), n° 12: 92, 1921.

REFERENCES: 8-18-37-38-64-65-79-102-114-128-130-186-205.

Podospora ignota A. Bell & Mahoney in Bell
CBS Biodiv. Ser. 3: 61, 2005.

REFERENCES: 18.

Podospora immersa (R. Stratton) Cain
Can. J. Bot. 40: 460, 1962.

≡ *Pleurage immersa* R. Stratton, Ohio Biol. Survey 3: 92, 1921.

REFERENCES: 38-44-64-80-114-115-128-186.

Schizothecium inaequale (Cain) N. Lundq.
Symb. Bot. Upsal. 20: 334, 1972. Fig.34

≡ *Sordaria inaequalis* Cain in Cain & Groves, Can. J. Res. 26: 489, 1948.
≡ *Pleurage inaequalis* (Cain) C. Moreau, Encycl. Mycol. 25: 260, 1953.
≡ *Podospora inaequalis* (Cain) Cain, Can. J. Bot. 40: 460, 1962.

EXAMINED MATERIAL: ITALY: 1) LECCE, maneggio di Lizzanello, 40 m, about ten scattered, superficial specimens, on horse dung in culture, V. Sciurti & F. Doveri, 23.11.01, 512.1-Lecce, CLSM 004.02.
TOTAL 1: horse.
REFERENCES: 2-3-31-39-64-88-114-128-130-133-142-157.

Podospora inflatula Cain
Can. J. Bot. 40: 454, 1962.

REFERENCES: 6-38-64-128-154-205.

Podospora inquinata Udagawa & S. Ueda
Mycotaxon 22 (2): 400, 1985.

REFERENCES: 64-198.

Podospora intestinacea N. Lundq.
Symb. Bot. Upsal. 20: 163, 1972. Fig.35

EXAMINED MATERIAL: ITALY: 1) NUORO, Villanova Strisáili (bosco di S. Barbara), 850 m, three almost fully immersed specimens, on pig dung, A. Bizzi, 11.11.99, 531.4-Villanova Strisáili, CLSM 007.00. 2) RAVENNA, Marina Romea, 0 m, on horse dung in culture, F. Doveri, 6.4.01, 223.1-Marina Romea, CLSM 007.00 bis. 3) COSENZA, Serra Pedace-loc. Silvana Manzio, 1450 m, on cattle dung in culture, C. Lavorato, 15.2.01, 560.1-Monte Volpintesta, CLSM 007.00 ter. 4) MACERATA, Macchia di Fuoco, 550 m, on horse dung in culture, A. Bizzi, 3.5.02, 313.1-S. Ginesio, CLSM 007.00 quater. 5) MACERATA, Pintura di Bolognola, 1600 m, on horse dung in culture, A. Bizzi, 3.5.02, 313.1-S. Ginesio, CLSM 007.00 penta.
TOTAL 5: horse 3; cattle 1; pig 1.
REFERENCES: 9-15-18-24-64-107-110-114-136-171.

Podospora karachiensis Mirza & Cain
Can. J. Bot. 47: 2026, 1969.

REFERENCES: 64-128.

Podospora lautarea Guiraud, Sage, Seigle-Mur. & Steiman
Antonie van Leeuwenhoek 66: 352, 1994.

REFERENCES: 64-89-185.

Podospora lindquistii García-Zorrón
Bol. Soc. Arg. Bot. 18 (1-2): 173, 1977.

REFERENCES: 64-81.

Podospora longicaudata (Griffiths) Cain
Can. J. Bot. 40: 460, 1962.

≡ *Pleurage longicaudata* Griffiths, Mem. Torr. Bot. Cl. 11: 81, 1901.
= ? *Podospora pectinata* N. Lundq., Svensk Bot. Tidskr. 64 (4): 417, 1970.

REFERENCES: 3-4-15-18-36-38-64-83-84-102-113-114-115-128-168-199-203.

Podospora longicollis (L.M. Ames) Mirza & Cain
Can. J. Bot. 47: 2028, 1969.

≡ *Schizothecium longicolle* L.M. Ames, Sydowia 5: 120, 1951.
≡ *Pleurage longicollis* (L.M. Ames) Boedijn, Persoonia 2 (3): 312, 1962.

REFERENCES: 9-25-36-64-78-110-114-128-144.

Podospora longispora (Bat. & Pontual) N. Lundq.
Symb. Bot. Upsal. 20 (1): 135, 1972.

≡ *Sordaria longispora* Bat. & Pontual, Bol. Secr. Agric. Ind. Com. (Recife) 15: 39, 1948.

REFERENCES: 12-64-114-115-128.

Podospora macrodecipiens M.J. Richardson
Micologia Balcanica, 2008 (in print).

REFERENCES: 157.

Podospora macropodalis Mirza & Cain
Can. J. Bot. 47: 2029, 1969.

REFERENCES: 64-128-198.

Podospora mexicana Mirza & Cain
Can. J. Bot. 47: 2030, 1969.

REFERENCES: 64-114-128-157.

Podospora millespora (Alf. Schmidt) Cain
Can. J. Bot. 40: 460, 1962.

≡ *Philocopra millespora* Alf. Schmidt, Neunzig. Jahr.-Bericht Schles. Gesellsch. 1: 124, 1913.

REFERENCES: 36-38-64-114-127-128-130-168-199.

Podospora minicauda Faurel & Locq.-Linard in Locquin-Linard
Rev. Mycol. 42: 344, 1978.

REFERENCES: 64-88-105-133.

Schizothecium miniglutinans (Mirza & Cain) N. Lundq.
Symb. Bot. Upsal. 20 (1): 254, 1972. Figs.37-38

≡ *Podospora miniglutinans* Mirza & Cain, Can. J. Bot. 47: 2030-2031, 1969.

EXAMINED MATERIAL: ITALY: 1) NUORO, Cardedu (loc. Perda Pera), 0m , one superficial specimen on sheep dung in culture, A. Bizzi, 7.11.99, 541.1-Jerzu, CLSM 011.00. 2) RAVENNA, Marina Romea, 0 m, on horse dung in culture, F. Doveri, 6.4.01, 223.1-Marina Romea, CLSM 011.00 bis. 3) LECCE, Vanze, 10 m, on horse dung in culture, V. Sciurti & F. Doveri, 24.11.01, 513.4-S. Foca, CLSM 011.00 ter. 4) MACERATA, Sasso Tetto, 1600 m, on sheep dung, F. Doveri, 3.5.02, 325.1-Bolognola, CLSM 011.00 quater. 5) VERBANIA, Macugnaga (Monte Moro), 2700 m, on hare dung in culture, L. Levorato, 24.8.03, 071.1-Monte Rosa, CLSM 011.00 penta. 6) BELLUNO, Tambre d'Alpago, 800 m, on deer dung in culture, G. Consiglio, 10.7.04, 064.4-Farra d'Alpago, CLSM 011.00 esa. 7) BELLUNO, Lorenzago, 900 m, on roe deer dung in culture, A. Bizzi, 24.7.04, 030.3-Pieve di Cadore, CLSM 011.00-epta. 8) VICENZA, Sarego, 250 m, on sheep dung, A. Bizzi, 13.4.05, 125.2-Longare, CLSM 011.00-octo. 9) VICENZA, Monte Caldiero, on sheep dung in culture, A. Bizzi, 7.8.05, 125.3-Montebello Vicentino, CLSM 011.00-ena. 10) BELLUNO, Foresta del Cansiglio-loc. Pian Rosanda, 1000 m, on deer dung in culture, A. Bizzi, 16.7.05, 064.4-Farra d'Alpago, CLSM 011.00-deca. 11) UDINE, Passo del Pura, 1500 m, on cattle dung in culture, F. Bersan, 26.6.05, 031.3-Ampezzo, CLSM 011.00-XI. 12) VICENZA, Valli del Pasubio-rifugio Balasso, 900 m, on cattle dung in culture, A. Bizzi, 14.5.06, 102.1-Recoaro Terme, CLSM 011.00-XII. 13) VERONA, Erbezzo-Parco della Lessinia, 1600 m, on horse dung in culture, A. Bizzi, 1.6.06, 102.3-Bosco Chiesanuova, CLSM 011.00-XIII. 14) TRENTO, Brentonico-Monte Baldo, 1400 m, on cattle dung in culture, A. Bizzi, 25.5.06, 080.2-Riva del Garda, CLSM 011.00-XIV.
TOTAL 14: sheep 4; cattle 3; horse 3; deer 2; hare 1; roe deer 1.
REFERENCES: 15-18-20-31-64-110-114-128-143-199.

Podospora minipistillata R.S. Khan & J.C. Krug in Krug & Khan
Can. J. Bot. 67: 1179, 1989.

REFERENCES: 64-102.

Podospora minor Ellis & Everh.
Am. Nat. 31: 341, 1897.

≡ *Sordaria minor* (Ellis & Everh.) Sacc. & P. Syd., Syll. Fung. 14: 493, 1899.
≡ *Pleurage minor* (Ellis & Everh.) Griffiths, Mem. Torr. Bot. Cl. 11: 67, 1901.

REFERENCES: 64-83-84-128-130-163.

Podospora multicaudiculata Cailleux
Cah. Maboké 7 (2): 102, 1969.

REFERENCES: 35-36-64-65-115.

Podospora (= *Schizothecium*) *multipilosa* J.H. Chang & Y.Z. Wang
Bot. Bull. Acad. Sin. 46: 169, 2005.

REFERENCES: 45.

Podospora multispora R.S. Khan & Cain
Can. J. Bot. 50: 1659, 1972.

REFERENCES: 64-80-97-102.

Podospora myriaspora (H. Crouan & P. Crouan) Niessl
Hedwigia 22: 156, 1883. Figs.39-40

≡ *Sordaria myriaspora* H. Crouan & P. Crouan, Fl. Finistère: 22, 1867.
≡ *Philocopra myriaspora* (H. Crouan & P. Crouan) Sacc., Syll. Fung. 1: 251, 1882.
≡ *Pleurage myriaspora* (H. Crouan & P. Crouan) Kuntze, Rev. Gen. Plant. 3: 505, 1898.

EXAMINED MATERIAL: ITALY: 1) PISA, Calambrone stables, 0 m, about twenty gregarious, superficial specimens on horse dung in culture, F. Doveri, 26.2.97, 272.2-Marina di Pisa, CLSM 00497. 2) VICENZA, Sarego (Monte Cocco), 230 m, on horse dung in culture, A. Bizzi, 125.3-Longare, 125.2-Longare, CLSM 00497 bis. 3) VICENZA, Grancona (Monte Caldiero), 230 m, on sheep dung, A. Bizzi, 9.00, 125.3-Montebello, CLSM 00497 ter. 4) COSENZA, Acri-loc. S. Zagaria, 800 m, on donkey dung in culture, C. Lavorato, 25.2.01, 552.3-Acri, CLSM 00497-quater. 5) VENEZIA, Alberoni, 0 m, on horse dung in culture, A. Bizzi, 23.2.02, 148.1-Alberoni, CLSM 00497 penta. 6) TRENTO, Roncone, 850 m, on goat dung in culture, F. Doveri, 11.9.02, 080.4-Roncone, CLSM 00497 esa. 7) BELLUNO, Lorenzago, 900 m, on roe deer dung in culture, A. Bizzi, 22.7.02, 030.3-Pieve di Cadore, CLSM 00497 epta. 8) VERONA, Molina, 800 m, on horse dung in culture, A. Bizzi, 18.9.03, 101.2-Dolcè, CLSM 00497 octo.
TOTAL 8: horse 4; donkey 1; goat 1; roe deer 1; sheep 1.
REFERENCES: 24-56-64-67-78-93-103-113-114-160-171-177-195-204.

Schizothecium nannopodale (Cain) L. Cai in Cai et al.
Fungal Diversity 19: 15, 2005.

≡ *Podospora nannopodalis* Cain, Can. J. Bot. 40: 455, 1962.

REFERENCES: 31-38-64-88-128-184.

Schizothecium nanum N. Lundq.
Symb. Bot. Upsal. 20: 255, 1972.

REFERENCES: 24-31-64-93-114.

Podospora obclavata A. Bell
Australasian Mycologist 25 (2): 42, 2006.

REFERENCES: 19.

Schizothecium oedotrichum N. Lundq.
Symb. Bot. Upsal. 20: 255, 1972.

REFERENCES: 31-64-115.

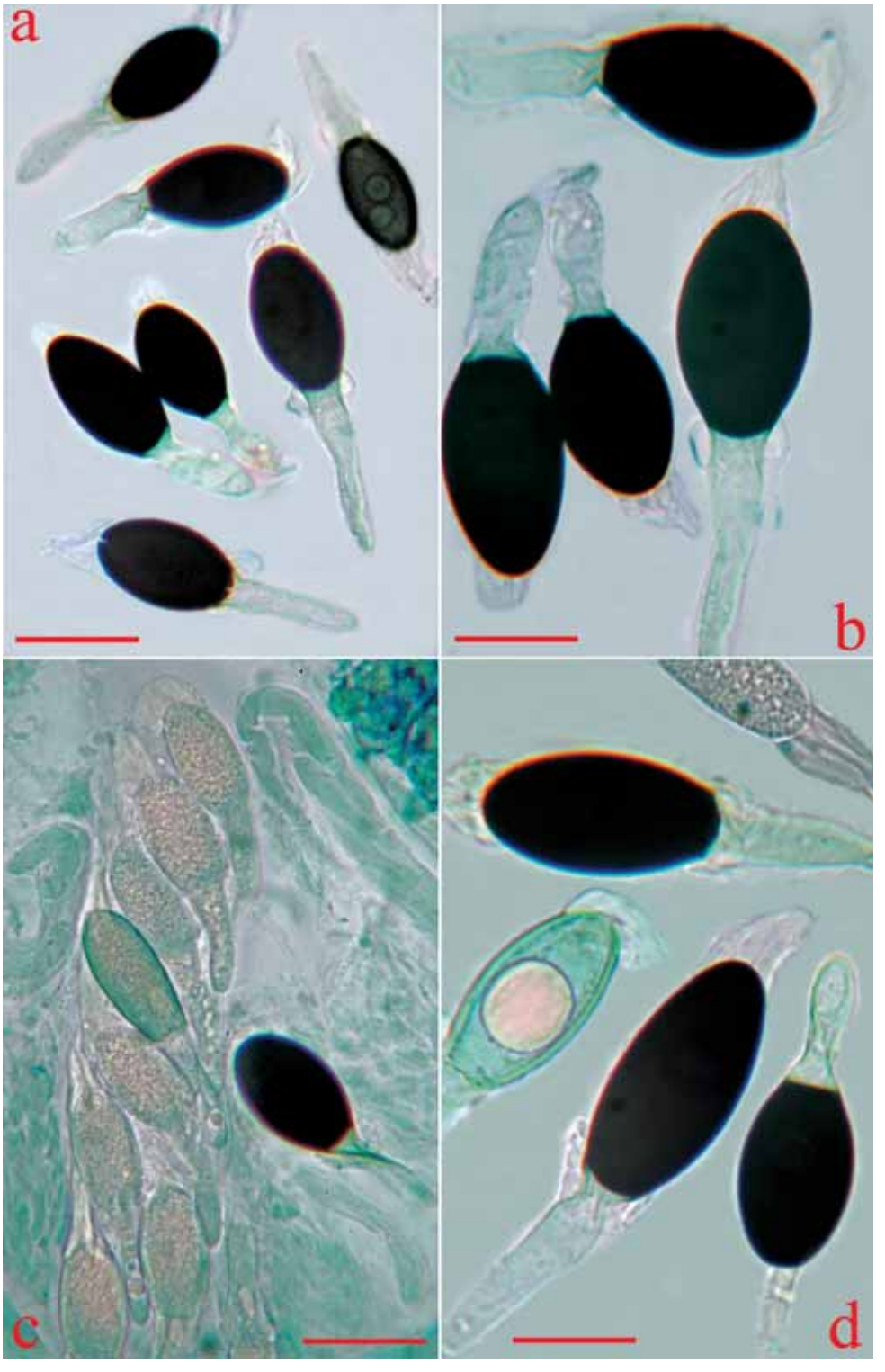

Fig. 1a-d. *Podospora alexandri*: (methyl blue) a-b = mature spores; c = ascus with immature spores; d = spores in different stages. Scale bars: a,c = 50 µm; b,d = 30 µm.

Fig. 2a-d. *Podospora alexandri*: (methyl blue) a-d = immature spores in different stages (a; c-d = inside the asci). Scale bars: a,c-d = 50 µm; b = 30 µm.

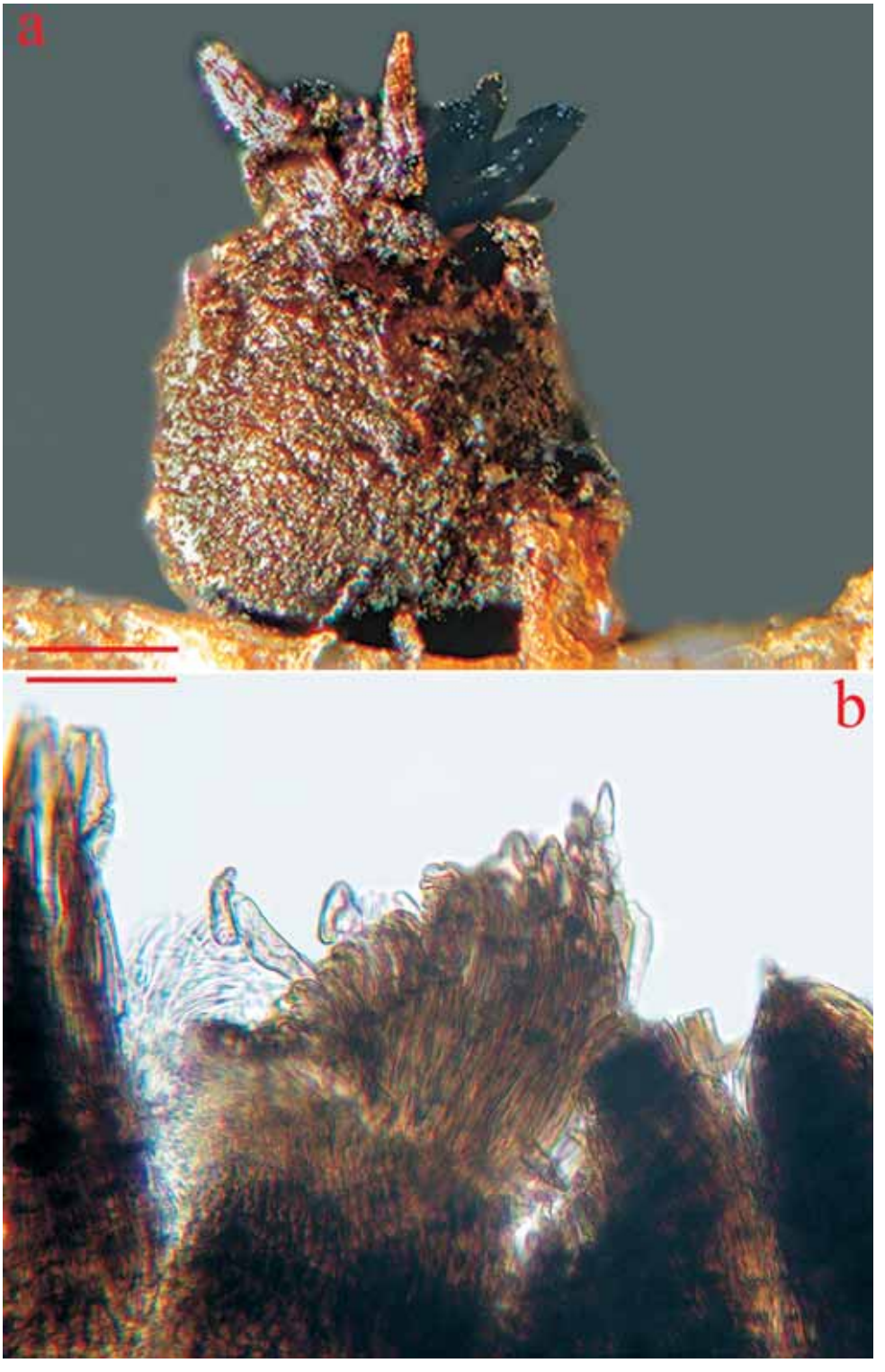

Fig. 3a-b. *Schizothecium aloides*: a = perithecioid ascoma with a neck base crowned with triangular scales of swollen agglutinated hairs; b = swollen agglutinated hairs at the neck base. Scale bars: a = 150 µm; b = 50 µm.

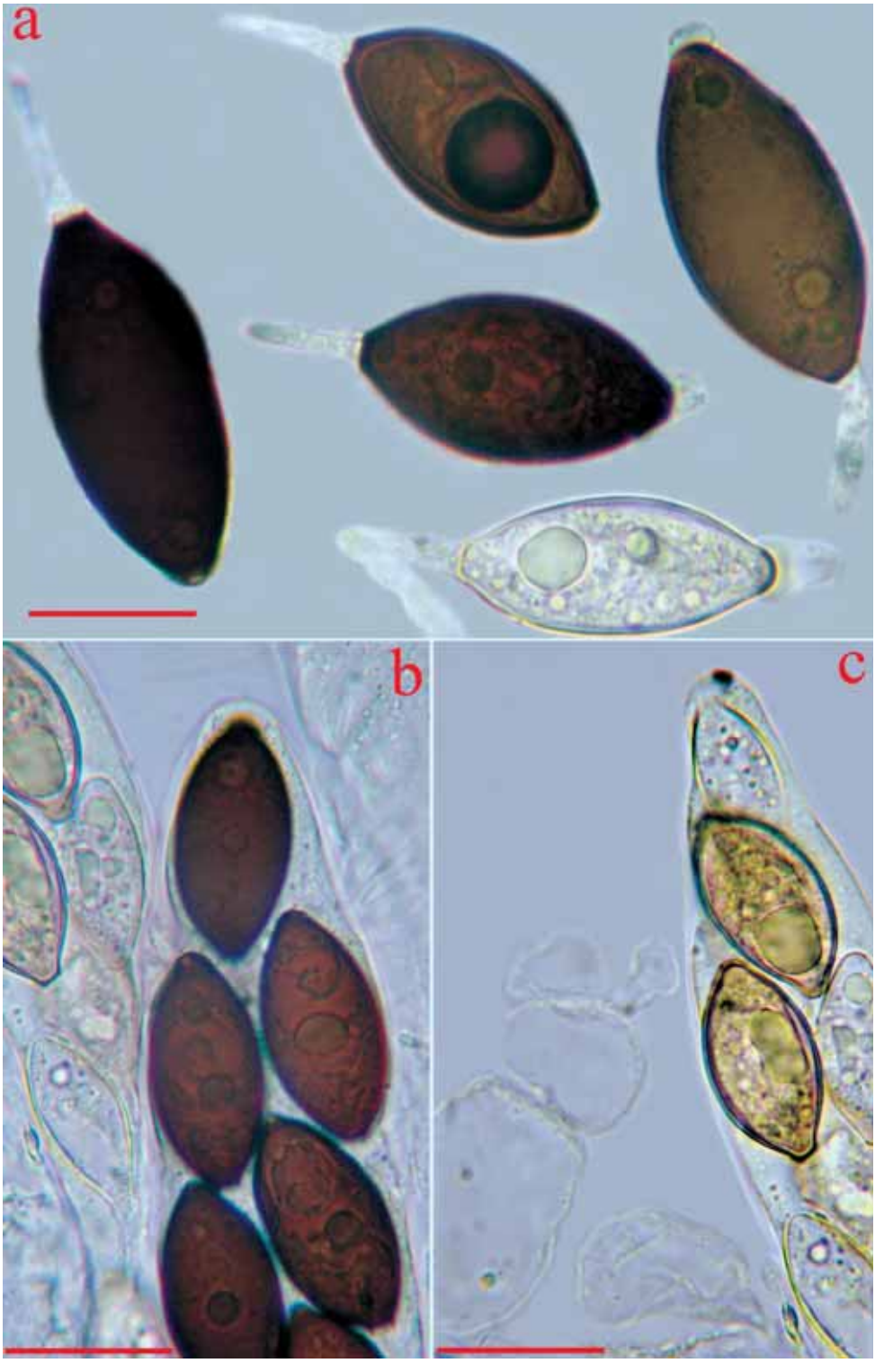

Fig. 4a-c. *Schizothecium aloides*: a = mature spores and an immature one at the base; b = parts of 8-spored asci with biseriate spores in different stages; c = an immature ascus (on the right) and jacket paraphyses (on the left and below). Scale bars: a = 15 µm; b-c = 25 µm.

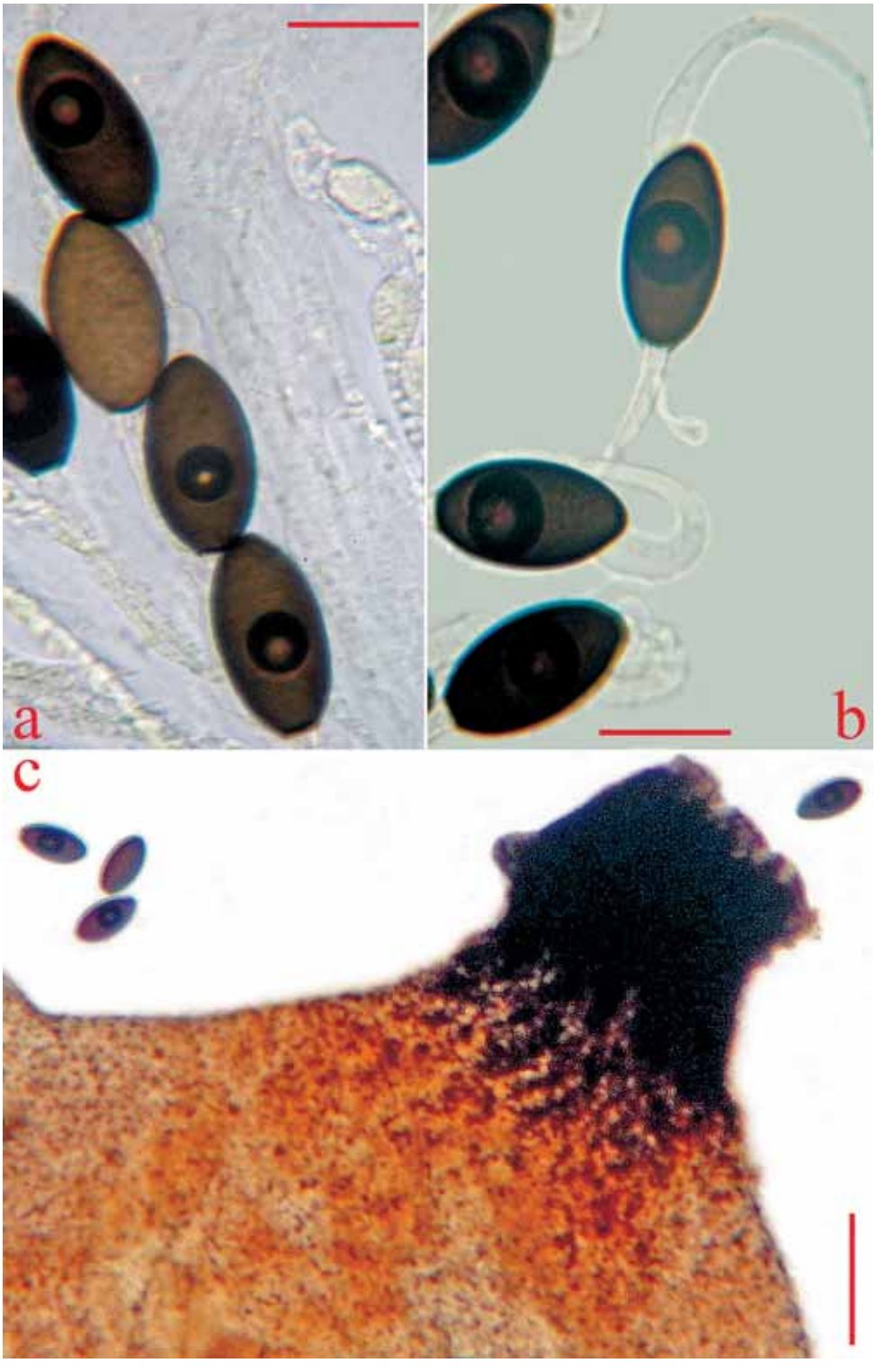

Fig. 5a-c. *Podospora anserina*: a = parts of 4-spored asci with spores in different stages; b = mature spores; c = upper portion of the perithecium and neck exceptionally lacking rigid hairs. Scale bars: a-b = 25 µm; c = 100 µm.

Fig. 6. *Podospora anserina*: mature spores. Scale bar = 20 µm.

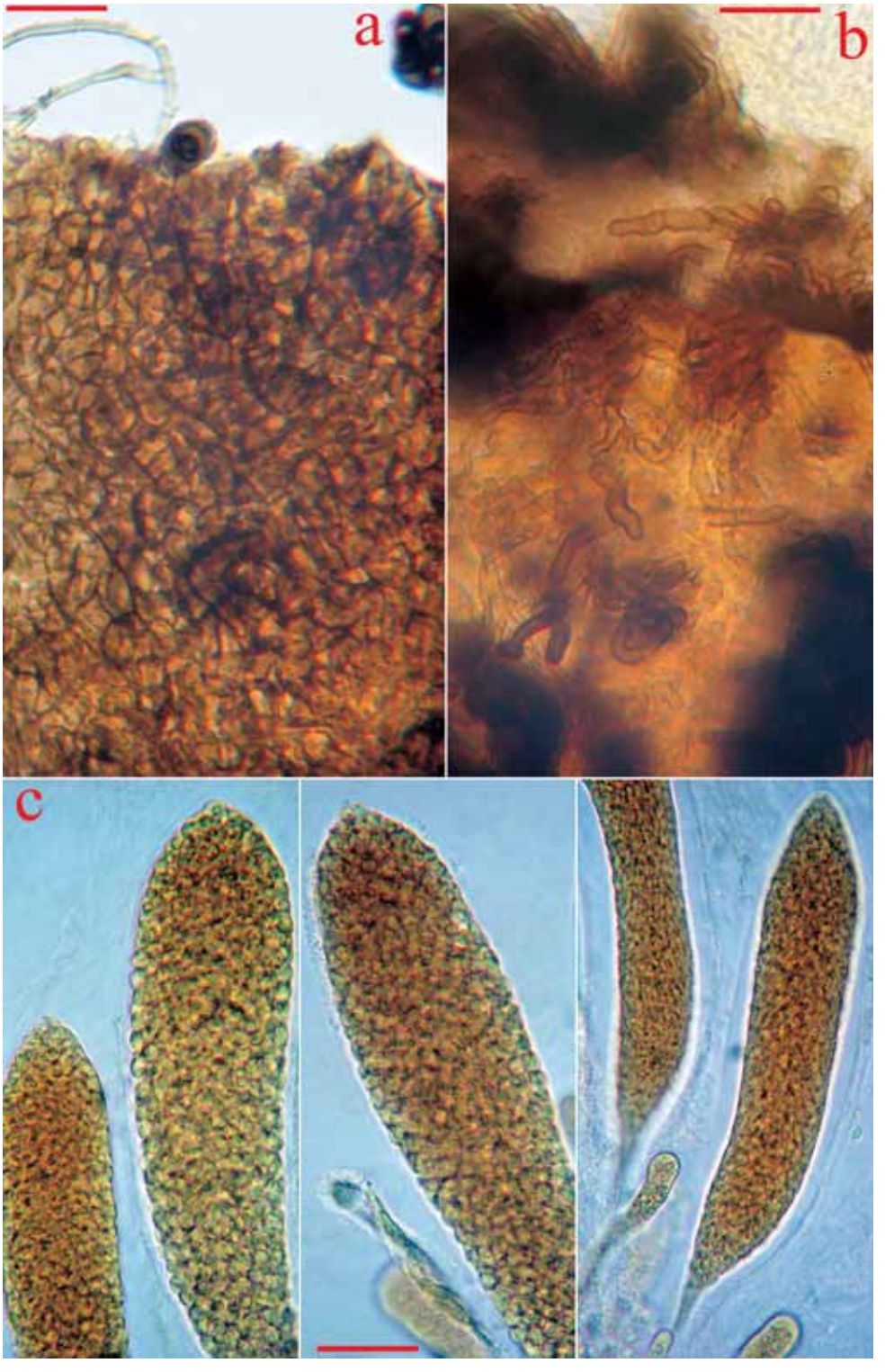

Fig. 7a-c. *Podospora araneosa*: a = exoperidium with two hyphoid hairs; b = protruding, thick-walle, papillate cells, and germs of hairs at the neck base; c = polyspored immature asci. Scale bar: a-c = 20 µm.

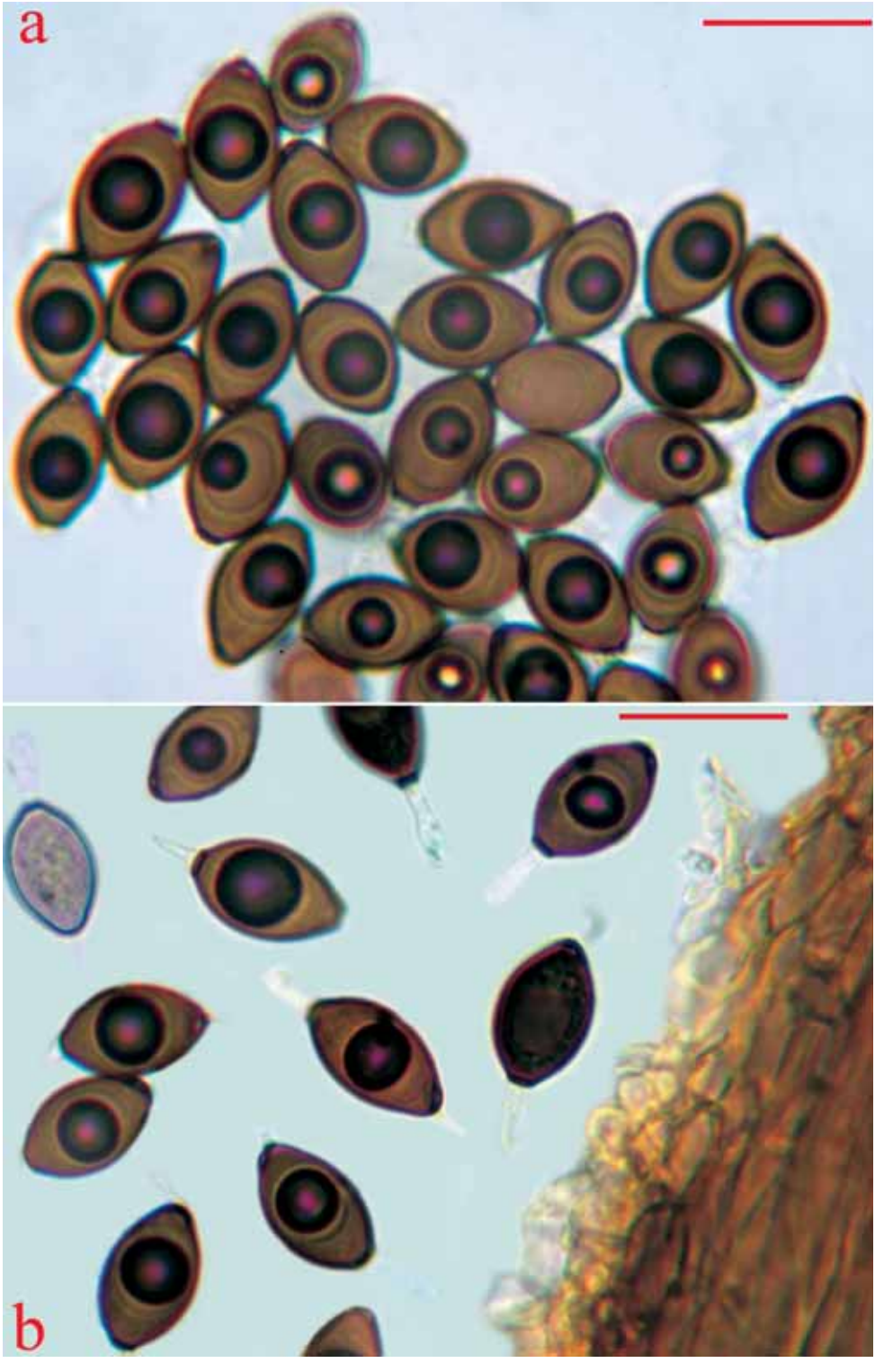

Fig. 8a-b. *Podospora araneosa*: a = group of mature spores inside the ascus; b = details of spores. On the right, middle peridial layer of tangentially flattened cells. Scale bar: a-b = 25 µm.

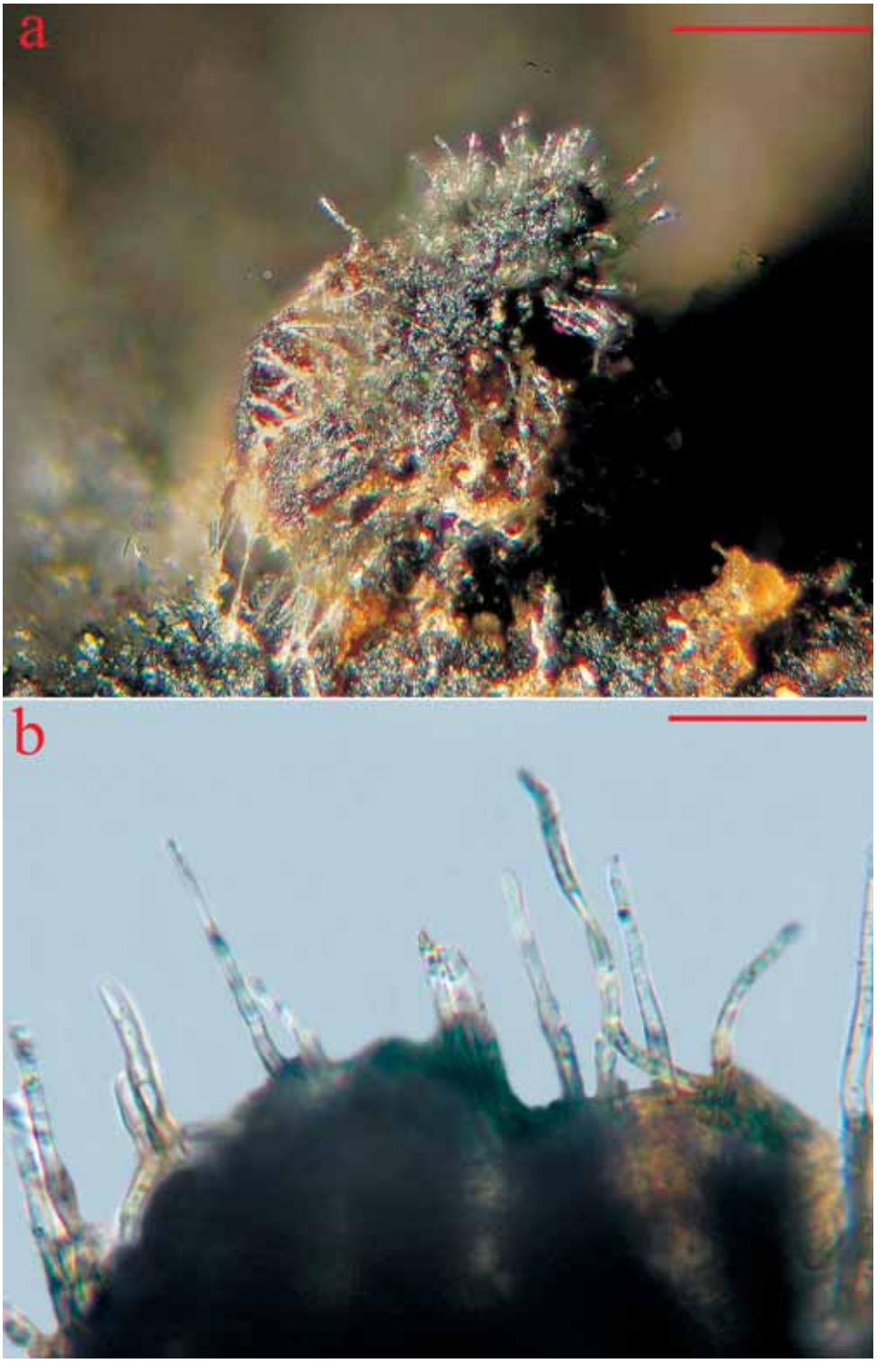

Fig. 9a-b. *Podospora australis*: a = perithecioid ascoma with hairy neck; b = hairs at the perithecial neck. Scale bars: a = 400 µm; b = 40 µm.

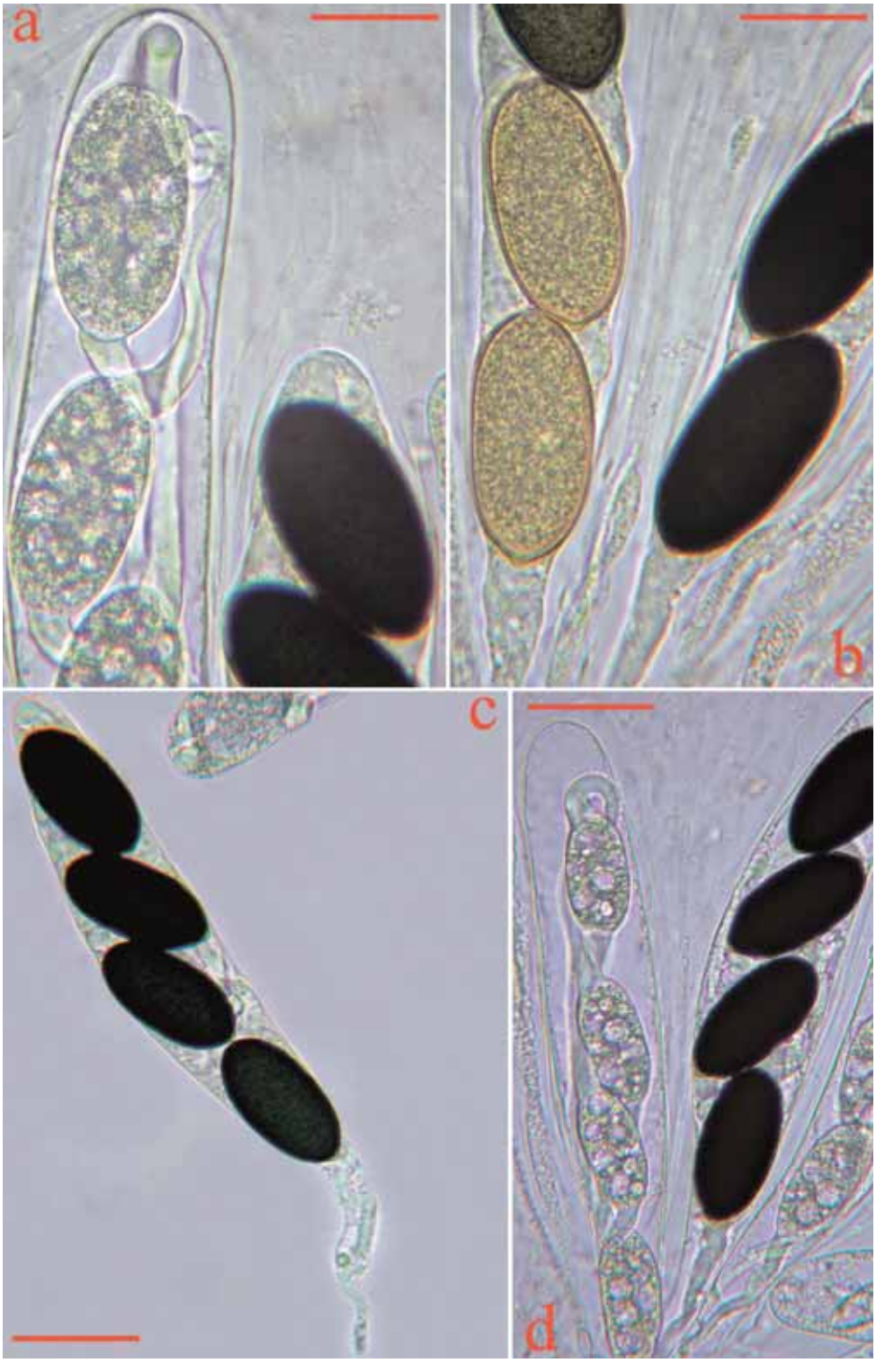

Fig. 10a-d. *Podospora australis*: a-d = 4-spored asci with spores in different stages. Scale bars: a-b = 30 µm; c-d = 50 µm.a

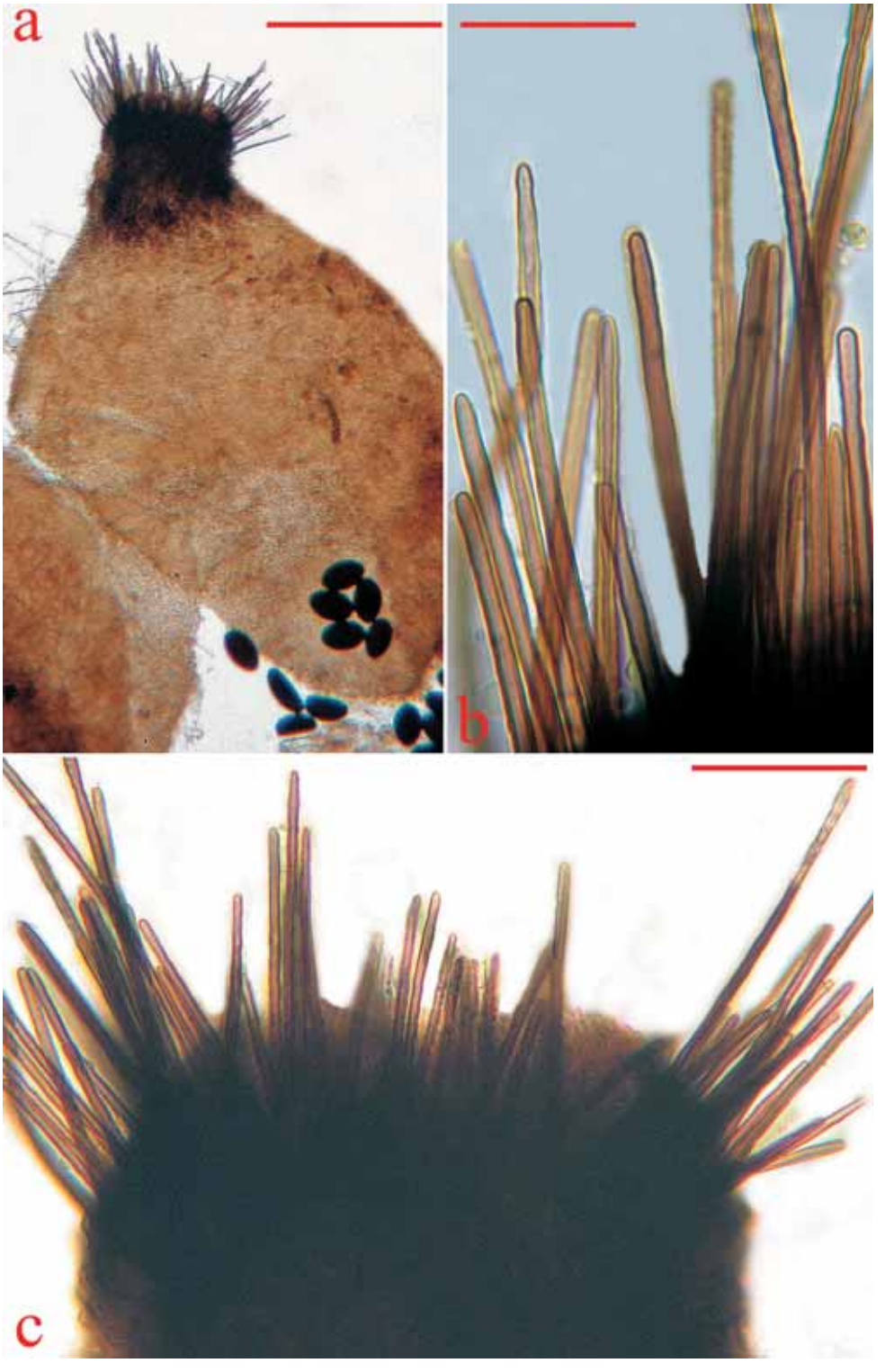

Fig. 11a-c. *Podospora austrohemisphaerica*: a = perithecioid ascoma with hairy neck; b = detail of neck hairs; c = perithecial neck with rigid hairs. Scale bars: a = 200 µm; b = 20 µm; c = 40 µm.

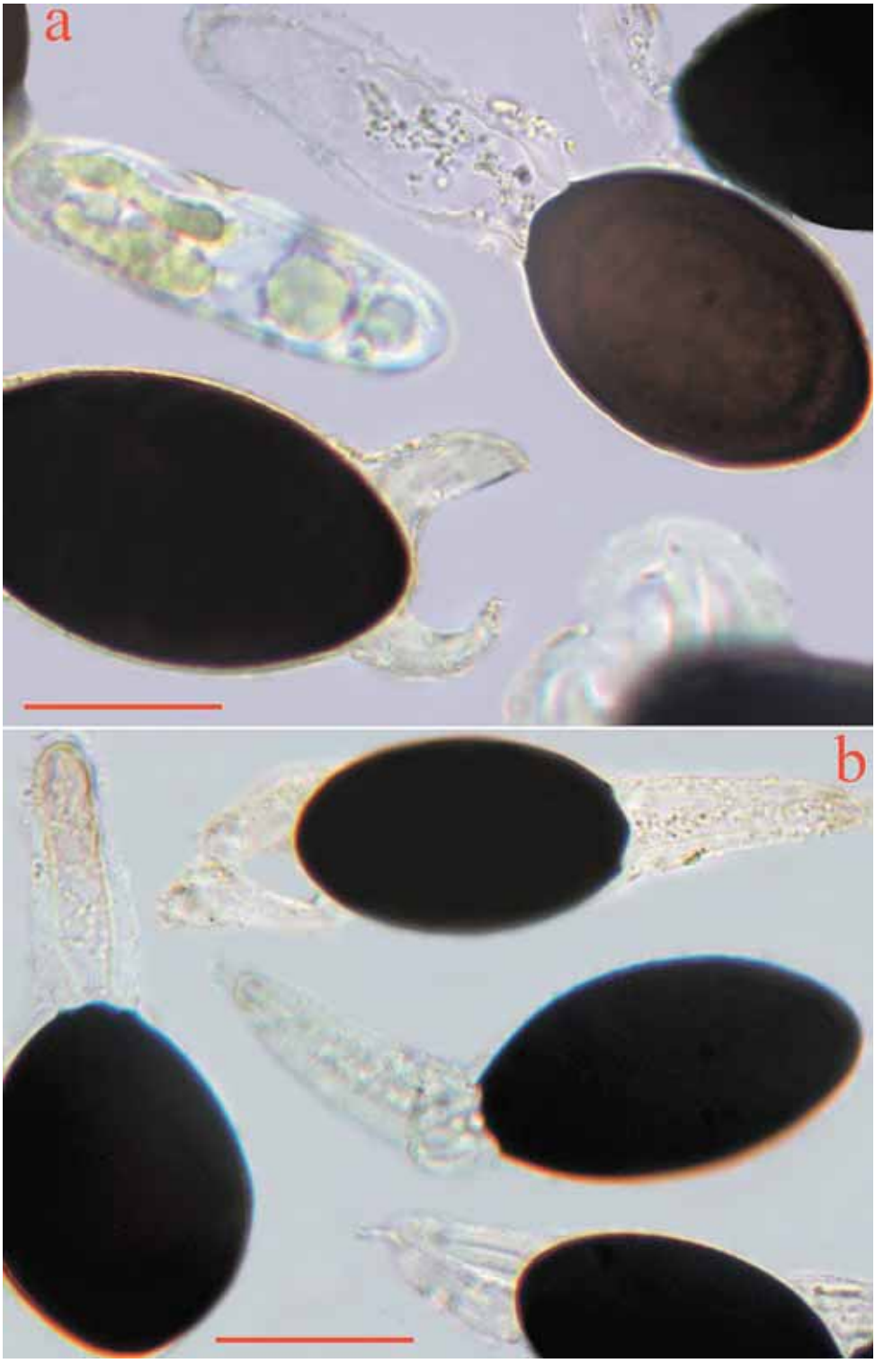

Fig. 12a-b. *Podospora austrohemisphaerica*: a,b = spores. Scale bars: a = 25 µm; b = 30 µm.

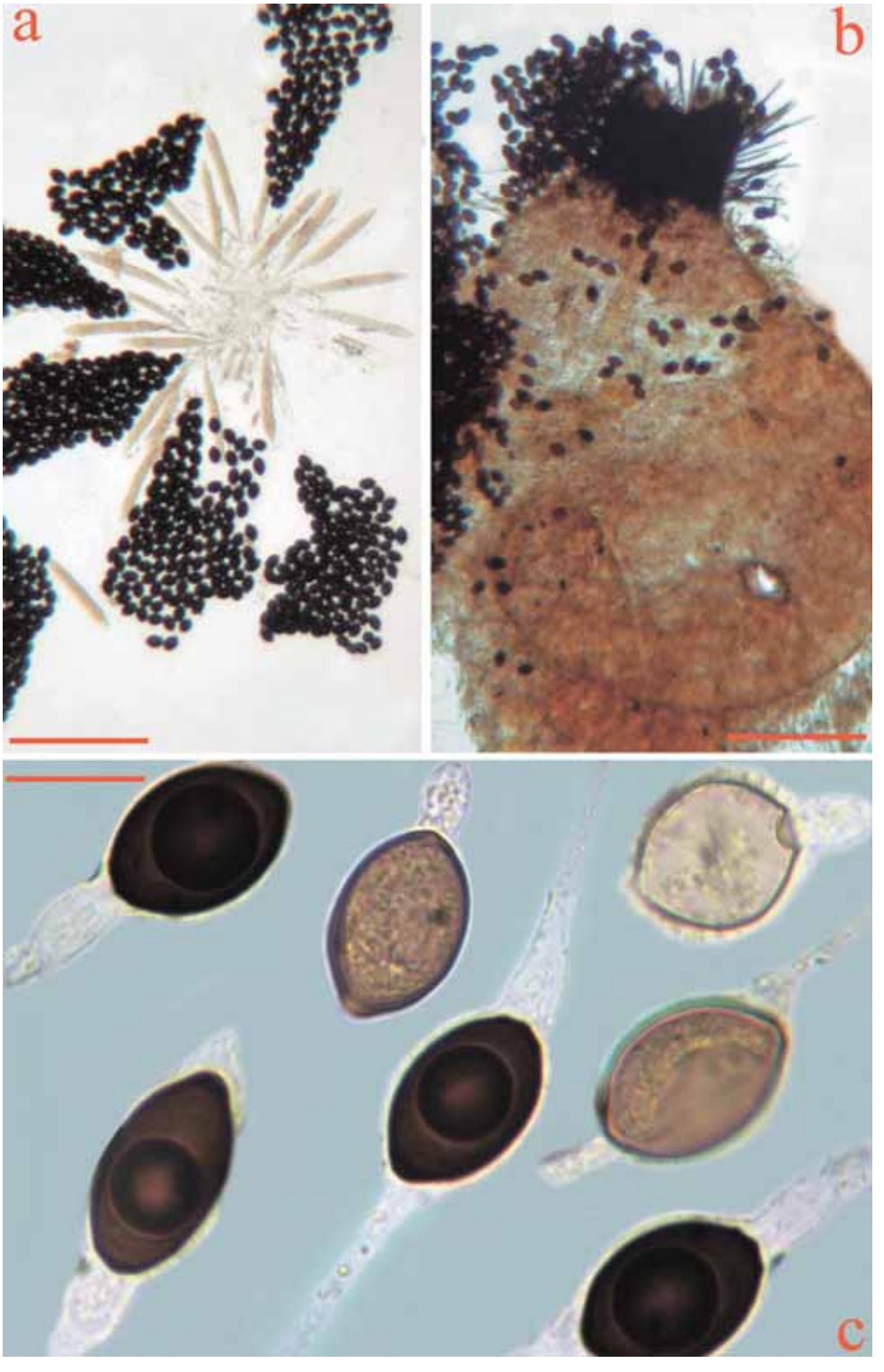

Fig. 13a-c. *Podospora bifida*: a = centrum with polyspored asci; b = perithecium with hyphoid hairs and neck with rigid hairs. Scale bars: a-b = 150 µm; c = 15 µm.

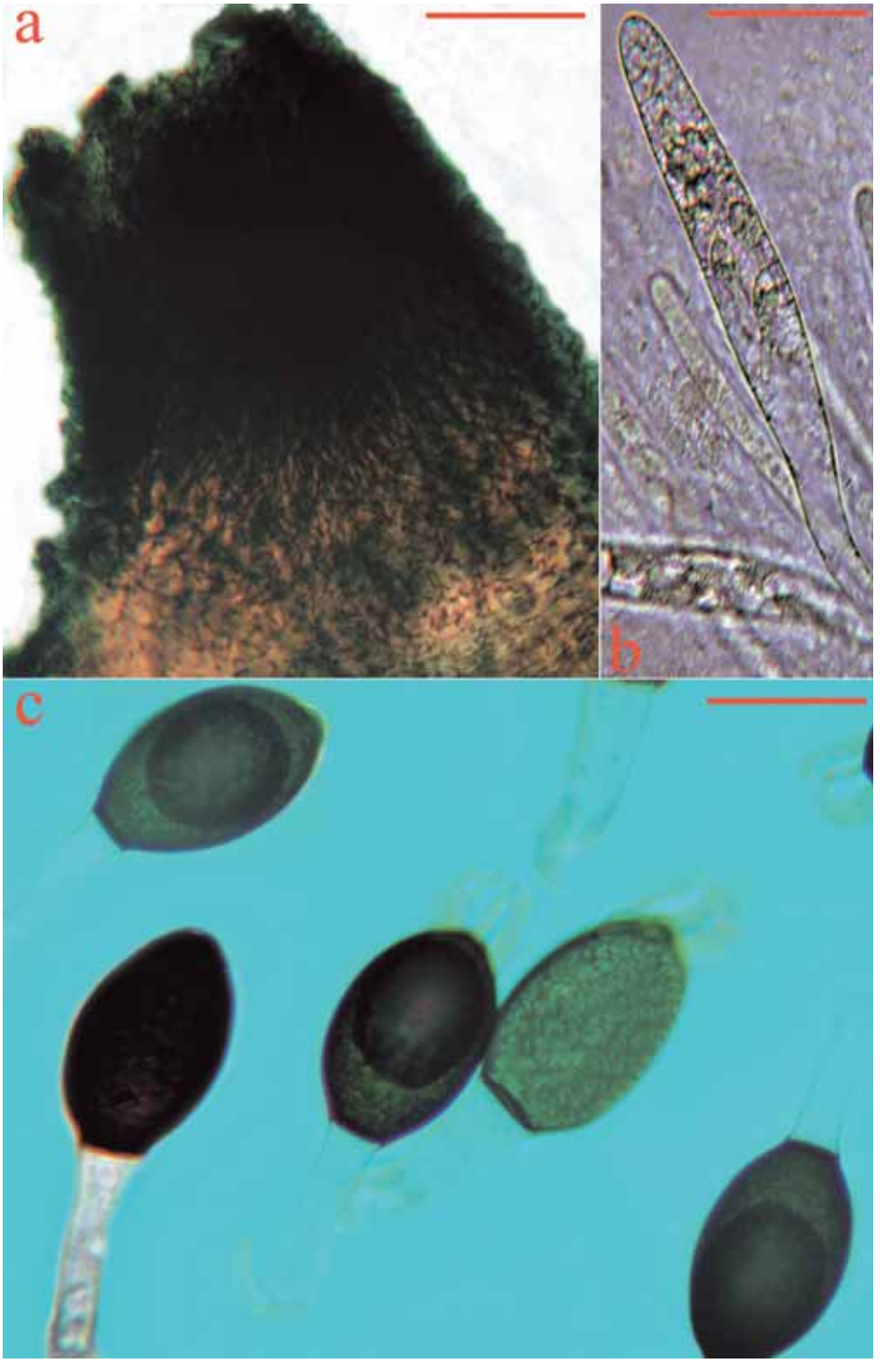

Fig. 14a-c. *Podospora communis*: (methyl blue) a = perithecial neck; b = immature 8-spored asci; c = spores. Scale bars: a = 40 µm; b = 50 µm; c = 20 µm.

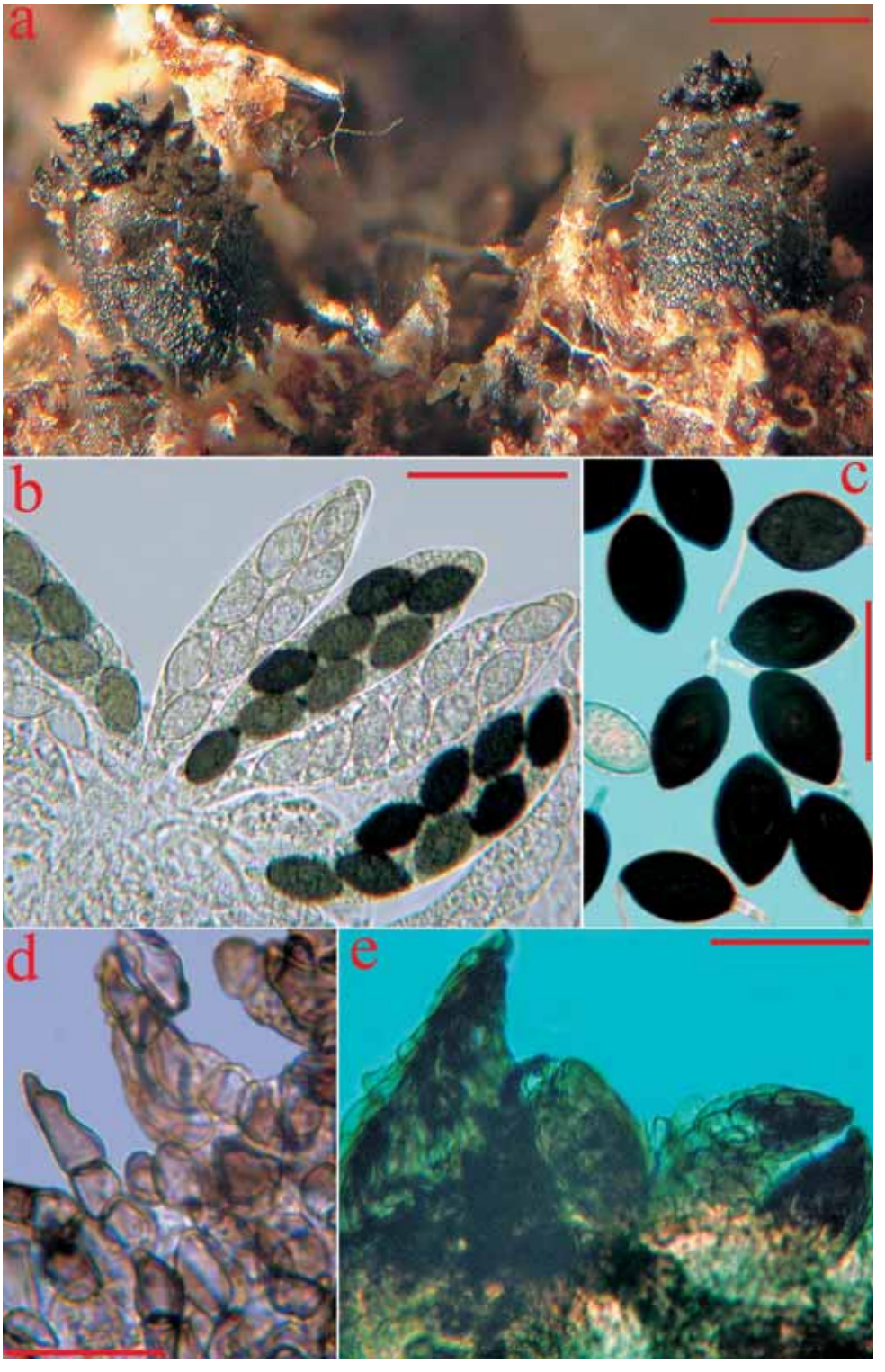

Fig. 15a-e. *Schizothecium conicum*: a = perithecia with swollen agglutinated hairs at the neck base; b = 8-spored asci with biseriate spores in different stages; c = spores (methyl blue); d = detail of swollen agglutinated hairs; e = swllen agglutinated hairs in scales at the neck base (methyl blue). Scale bars: a = 400 µm; b,e = 50 µm; c = 30 µm; d = 40 µm.

Fig. 16a-c. *Podospora curvicolla*: a = perithecioid ascoma with tufts of agglutinated, rigid neck hairs; b = ascoma with a semitransparent peridium, inside which a polyspored ascus is observable; c = detail of neck hairs. Scale bars: a-b = 250 µm; c = 50 µm.

Podospora ostlingospora Cain
Can J. Bot. 40: 456, 1962.

REFERENCES: 38-64-102-128.

Podospora papilionacea N. Lundq.
Svensk Bot. Tidsk. 67: 45, 1973.

REFERENCES: 64-115.

Podospora papillata R.S. Khan & Cain
Can. J. Bot. 50: 1652, 1972.

REFERENCES: 64-97-102.

Podospora papilliformis Cain
Can. J. Bot. 40: 457, 1962.

REFERENCES: 38-61-64-114-128.

Podospora perplexens (Cain) Cain
Can. J. Bot. 40: 460, 1962.

≡ *Sordaria perplexens* Cain, Univ. Toronto Stud. Mycol. Ser. 38: 50, 1934.
≡ *Pleurage perplexens* (Cain) C. Moreau, Encycl. Mycol. 25 : 125, 1953.

REFERENCES: 9-18-22-37-38-61-64-73-93-111-114-128-130.

Podospora petrogale A. Bell
Muelleria 12 (2): 236, 1999.

REFERENCES: 16-18-64.

Schizothecium pilosum (Mouton) N. Lundq.
Symb. Bot. Upsal. 20: 255, 1972. Fig.41

≡ *Sordaria pilosa* Mouton, Bull. Soc. Roy. Bot. Belg. 25: 144, 1886.
≡ *Pleurage pilosa* (Mouton) C. Moreau, Encycl. Mycol. 25: 264, 1953.
≡ *Podospora pilosa* (Mouton) Cain, Can. J. Bot. 40: 460, 1962.

EXAMINED MATERIAL: ITALY: 1) BRESCIA, passo del Tonale, 2000 m, about one hundred gregarious, semi-immersed specimens on cattle dung in culture, P. Cugildi, 9.9.99, 041.2-Ponte di Legno, CLSM 01899.
TOTAL 1: cattle.
REFERENCES: 11-12-31-37-64-68-93-114-128-130-134.

Podospora pistillata Mirza & Cain
Can. J. Bot. 47: 2035,1969.

REFERENCES: 10-64-128.

Podospora platensis (Speg.) Niessl
Hedwigia 22: 156, 1883.

≡ *Philocopra platensis* Speg., Anal. Soc. Cient. Argentina 12: 107, 1881.

REFERENCES: 10-36-64-74-79-102-110-114-128-130-180.

Podospora pleiospora (G. Winter) Niessl
Hedwigia 22: 156, 1883. Fig.42

≡ *Sordaria pleiospora* G. Winter, Hedwigia 10: 161, 1871.
≡ *Philocopra pleiospora* (G. Winter) Sacc., Syll. Fung. 1: 249, 1882.
= *Philocopra pleiospora* f. *macrospora* Marchal, Bull. Soc. Roy. Bot. Belg. 23 (3): 90, 1884.
≡ *Pleurage pleiospora* (G. Winter) Kuntze Rev. Gen. Plant. 3 (3): 505, 1898.
≡ *Bombardia pleiospora* (G. Winter) Kirschst., Krypt.-Fl .Mark Brandemb. 7: 189, 1911.
≡ *Podospora decipiens* var. *pleiospora* (G. Winter) Chenant., Bull. Soc. Mycol. Fr. 35:114, 1919.

EXAMINED MATERIAL: ITALY: 1) UDINE, Sauris di Sopra, 1400 m, about five semi-immersed specimens on horse dung in culture, G. Medardi, 25.6.98, 030.2-Forni di Sopra, CLSM 05598. 2) MESSINA, Novara di Sicilia (Loc. Serra Mandrazze), on cervine dung, G. Robich, 11.11.98, 613.4-Francavilla di Sicilia, CLSM 05598 bis. 3) CATANIA, Parco dell'Etna, 1500 m, on wild rabbit dung in culture, A. Bizzi, 9.11.98, 612.2-Randazzo, CLSM 05598 ter. 4) MILANO, Parco di Monza, 150 m, on horse dung in culture, F. Doveri, 29.5.00, 118.1-Monza, CLSM 05598-quater. 5) RAVENNA, Lido di Classe, 0 m, on wild rabbit dung, F. Doveri, 19.4.01, 241.3-Cervia, CLSM 05598-penta. 6) RAVENNA, Marina Romea, 0 m, on roe deer dung in culture, F. Doveri, 19.4.01, 223.1-Marina Romea, CLSM 05598-esa. 7) RAVENNA, Lido di Savio, 0 m, on wild rabbit dung in culture, Carchia, 19.4.01, 241.4-Lido di Savio, CLSM 05598-epta. 8) VENEZIA, Alberoni, 0 m, on horse dung in culture, A. Bizzi, 23.2.02, 148.1-Alberoni, CLSM 05598 octo. 9) VENEZIA, Ca' Savio, 0 m, on wild rabbit dung in culture, A. Bizzi, 2.11.02, 128.3-Venezia, CLSM 05598 ena. 10) COSENZA, Tarsia, 300 m, on goat dung in culture, C. Lavorato, 2.5.02, 543.2-Spezzano Albanese, CLSM 05598 deca. 11) REGGIO CALABRIA, Passo Petrulli (Aspromonte), 1100 m, on sheep dung, F. Doveri, 17.10.03, 602.4-Santo Stefano in Aspromonte, CLSM 05598-XI. 12) REGGIO CALABRIA, Gambarie, 1300 m, on cattle dung, A. Bizzi, 17.10.03, 602.1-Gambarie, CLSM 05598-XII. 13) VENEZIA, Caorle-loc. Brussa, on wild rabbit dung in culture, A. Bizzi, 10.10.04, 129.1-Caorle, CLSM 05598-XIII. 14) VENEZIA, Ca'Savio, 0 m, on wild rabbit dung in culture, L. Levorato, 24.3.06, 128.3-Venezia, CLSM 05598-XIV. 15) TRENTO, Vigo Rendena, 600 m, on cattle dung in culture, F. Doveri, 8.9.07, 059.3-Tione di Trento, CLSM 05598-XV. 16) TRENTO, Dimaro-Malghetta, 1100 m, on hare dung in culture, F. Doveri, 8.9.07, 042.1-Malé, CLSM 05598-XVI.
TOTAL 16: wild rabbit 6; horse 3; cattle 2; deer 1; goat 1; hare 1; roe deer 1; sheep 1.
REFERENCES: 9-13-15-18-24-33-37-44-46-62-64-68-77-84-93-98-103-107-114-115-120-144-157-160-170-177-195-199-201-208-212.

Podospora praecox Cailleux
Cah. Maboké 7 (2): 102, 1969.

REFERENCES: 35-36-64.

Podospora prethopodalis Cain
Can. J. Bot. 40: 458, 1962.

= *Podospora cainii* Narendra & V.G. Rao, Nova Hedwigia 27: 635, 1976..

REFERENCES: 3-5-18-36-38-52-64-102-104-113-114-128-137-197-204-205.

Podospora prolifica Cailleux
Cah. Maboké 7 (2): 102, 1969.

REFERENCES: 35-36-64-88.

Podospora pseudoinquinata S.I. Ahmed & Masood
Pak. J. Sci. Ind. Res. 36 (1): 41, 1993.

REFERENCES: 7-64.

Podospora pyriformis (A. Bayer) Cain
Can. J. Bot. 40: 460, 1962. Fig.43

≡ *Sordaria pyriformis* A. Bayer, Acta Soc. Sci. Nat. Morav. 1: 113, 1924.
≡ *Pleurage pyriformis* (A. Bayer) C. Moreau, Encycl. Mycol. 25: 249, 1953.

EXAMINED MATERIAL: ITALY: 1) LIVORNO, Botro delle Fontanelle, 200 m, a few scattered, immersed (except for the neck) specimens on cattle dung in culture, F. Doveri, 27.6.96, 284.4-Collesalvetti, MCVE 583. 2) VICENZA, Tonezza-Malga Melegnon, 1400 m, on cattle dung in culture, A. Bizzi, 4.7.02, 081.2-Castana, CLSM 03896 bis. 3) TRENTO, Regole di Malosco, 900 m, on sheep (?) dung in culture, G. Robich, 5.10.02, 026.3-Fondo, CLSM 03896 ter. 4) REGGIO CALABRIA, Gambarie, 1300 m, on cattle dung in culture, A. Bizzi, 17.10.03, 602.1-Gambarie, CLSM 03896 quater. 5) TRENTO, Malga Melegnun, 1300 m, on cattle dung in culture, F. Doveri, 3.9.04, 081.1-Caldonazzo, CLSM 03896 penta. 6) TRENTO, Malga Melegnun, 1300 m, on cattle dung in culture, F. Doveri, 3.9.04, 081.1-Caldonazzo, CLSM 03896 esa. 7) VICENZA, Valli del Pasubio-rifugio Balasso, 900 m, on cattle dung in culture, A. Bizzi, 14.5.06, 102.1-Recoaro Terme, CLSM 03896 epta.
TOTAL 7: cattle 6; sheep (?) 1.
REFERENCES: 9-13-15-18-26-37-59-60-64-91-103-110-114-128-130-171-202.

Podospora roselliniella Kamischko
Notulae Syst. Sect. Crypt. Inst. Bot. Komarovii Acad. Sci. U.R.S.S. 13: 163, 1960.

REFERENCES: 96.

Podospora selenospora Stchigel, Guarro & M. Calduch in Stchigel et al.
Mycologia 94 (3):554, 2002.

REFERENCES: 64-185.

Podospora serotina Cailleux
Cah. Maboké 7 (2): 102, 1969.

REFERENCES: 35-36-64.

Podospora setosa (G. Winter) Niessl
Hedwigia 22: 156, 1883. Figs.44-45

≡ *Sordaria setosa* G. Winter, Bot. Zeit. 31: 483, 1873.
≡ *Philocopra setosa* (G. Winter) Sacc., Syll. Fung. 1: 249, 1882.
= *Philocopra tarvisina* Sacc., Syll. Fung. 1: 250, 1882.
≡ *Pleurage setosa* (G. Winter) Kuntze, Rev. Gen. Plant. 3 (3): 505, 1898.
= *Philocopra setosa* (G. Winter) Sacc. var. *tarvisina* (Sacc.) Traverso, Fl. Ital. Crypt. 2 (2): 437, 1907.
= *Philocopra coeruleotecta* Rehm, Ann. Bot. 9: 363, 1911.
≡ *Bombardia setosa* (G. Winter) Mig., Thome's Krypt. Fl. 10 (1): 128, 1912.
≡ *Podospora pauciseta* (Ces.) Traverso var. *setosa* (G. Winter) Chenant., Bull. Soc. Mycol. Fr. 35: 114, 1919.
= *Podospora coeruleotecta* (Rehm) Cain, Can. J. Bot. 40: 459, 1962.
= *Podospora tarvisina* (Sacc.) Mirza & Cain, Can. J. Bot. 47: 2041, 1969.

EXAMINED MATERIAL: ITALY: 1) PISA, Calambrone, 0 m, about one hundred scattered or gregarious, almost fully immersed specimens on horse dung in culture, F. Doveri, 5.5.95, 272.1-Marina di Pisa, MCVE 489. 2) PISA, Calambrone, 0 m, on horse dung, F. Doveri, 28.11.95, 272.1-Marina di Pisa, CLSM 00795 bis. 3) FERRARA, bosco di S. Giustina (Mesola), 0 m, on badger dung in culture, F. Bersan & G. Visentin, 5.97, 187.1-Mesola, CLSM 00795 ter. 4) GORIZIA, isola della Cona, 0 m, on horse dung in culture, F. Bersan, 8.97, 109.1-Duino, AMB 6147. 5) TREVISO, Scalon, 230 m, on sheep dung in culture, E. Bizio, 6.6.97, 083.1-Valdobbiadene, CLSM 00795 penta. 6) ROVIGO, Porto Caleri, 0 m, on wild rabbit dung in culture, E. Bizio, 22.11.97, 169.2-Contarina, CLSM 00795 esa. 7) UDINE, Sauris di Sopra, 1400 m, on horse dung in culture, G. Medardi, 25.6.98, 030.2-Forni di Sopra, CLSM 00795 epta. 8) COSENZA, Corigliano Calabro (Contrada Tenimento), 300 m, on goat dung in culture, C. Lavorato, 16.5.98, 552.1-Corigliano Calabro, CLSM 00795 octo. 9) PORDENONE, Barcis, 700 m, on deer dung in culture, G. Zecchin, 19.6.98, 064.1-Montereale Valcellina, CLSM 00795 ena. 10) COSENZA, Rossano, 700 m, on wild pig dung in culture, C. Lavorato, 22.12.98, 552.1-Corigliano Calabro, CLSM 00795 deca. 11) CAGLIARI, Villasimíus, 100 m, on sheep dung in culture, A. Bizzi, 9.11.99, 567.1-Villasimíus, CLSM 00795-XI. 12) MILANO, Parco di Monza, 150 m, on horse dung in culture, F. Doveri, 29.5.00, 118.1-Monza, CLSM 00795-XII. 13) VICENZA, Sarego (Monte Roccolo), 250 m, on sheep dung, A. Bizzi, 9.00, 125.3-Montebello, CLSM 00795-XIII. 14) VICENZA, Grancona (Monte Caldiero), 230 m, on sheep dung in culture, A. Bizzi, 9.00, 125.3-Montebello, CLSM 00795-XIV. 15) POTENZA, Monticchio (loc. laghi di Monticchio), 600 m, on sheep dung in culture, A. Bizzi, 10.11.00, 451.1-Melfi, CLSM 00795-XV. 16) RAVENNA, Lido di Classe, 0 m, on wild rabbit dung in culture, F. Doveri, 6.4.01, 241.3-Cervia, CLSM 00795-XVI. 17) VENEZIA, Forte di S. Andrea, 0 m, on goat dung in culture, E. Bizio, 3.6.01, 128.3-Venezia, CLSM 00795-XVII. 18) COSENZA, Acri-Manche di Greca, 1100 m, on goat dung in culture, C. Lavorato, 15.2.01, 552.3-Acri, CLSM 00795-XVIII. 19) LECCE, Punta Prosciutto, 0 m, on sheep dung, P. Franchi & M. Marchetti, 24.11.01, 511.3-Torre Colimena, CLSM 00795-XIX. 20) LECCE, Vanze, 10 m, on cattle dung in culture, V. Sciurti & F. Doveri, 24.11.01, 513.4-S. Foca, CLSM 00795-XX. 21) L'AQUILA, Campo di Giove, 1100 m, on goat dung in culture, E. Bizio, 20.9.01, 370.3-Cansano, CLSM 00795-XXI. 22) COSENZA, Corigliano Calabro-loc. Baraccone, 1000 m, on cattle dung in culture, C. Lavorato, 4.11.01, 552.1-Corigliano Calabro, CLSM 00795-XXII. 23) COSENZA, Corigliano Calabro-loc. Tenimento, 250 m, on hen dung in culture, C. Lavorato, 23.10.01, 552.1-Corigliano Calabro, CLSM 00795-XXIII. 24) COSENZA, Corigliano Calabro-loc. Tenimento, 250 m, on pigeon dung in culture, C. Lavorato, 16.11.01, 552.1-Corigliano Calabro, CLSM 00795-XXIV. 25) COSENZA, Corigliano Calabro-loc. Tenimento, 250 m, on hen dung in culture, C. Lavorato, 16.11.01, 552.1-Corigliano Calabro, CLSM 00795-XXV. 26) COSENZA, Corigliano Calabro-loc. Tenimento, 250 m, on lizard dung in culture, C. Lavorato, 16.11.01, 552.1-Corigliano Calabro, CLSM 00795-XXVI. 27) ROVIGO, isola di Albarella, 0 m, on roe deer dung, A. Bizzi, 16.11.02, 170.3-Porto Levante, CLSM 00795-XXVII. 28)

RAVENNA, pineta di Ponte Bottole, 0 m, on fallow deer dung in culture, A. Bizzi, 11.11.02, 223.1-Marina Romea, CLSM 00795-XXVIII. 29) ROVIGO, isola di Albarella, 0 m, on wild rabbit dung, A. Bizzi, 16.11.02, 170.3-Porto Levante, CLSM 00795-XXIX. 30) COSENZA, Acri, 1050 m, on beech-marten dung in culture, C. Lavorato, 30.4.02, 552.3-Acri, CLSM 00795-XXX. 31) PISA, Chianni, 300 m, on sheep dung in culture, F. Doveri, 22.3.03, 284.2-Chianni, CLSM 00795-XXXI. 32) LECCO, Concenedo, 920 m, on cattle dung in culture, F. Doveri, 6.6.03, 076.4-Barzio, CLSM 00795-XXXII. 33) REGGIO CALABRIA, Tazza, 800 m, on cattle dung in culture, F. Doveri, 17.10.03, 602.3-Motta San Giovanni, CLSM 00795-XXXIII. 34) REGGIO CALABRIA, Tazza, 800 m, on sheep dung in culture, F. Doveri, 17.10.03, 602.3-Motta San Giovanni, CLSM 00795-XXXIV. 35) REGGIO CALABRIA, Gambarie, 1300 m, on cattle dung in culture, A. Bizzi, 17.10.03, 602.1-Gambarie, CLSM 00795-XXXV. 36) VERONA, Molina, 800 m, on horse dung in culture, A. Bizzi, 18.9.03, 101.2-Dolcè, CLSM 00795-XXXVI. 37) VICENZA, Grancona, on sheep dung, A. Bizzi, 20.4.04, 125.3-Montebello Vicentino, CLSM 00795-XXXVII. 38) VICENZA, parco S. Zeno-Schio, on roe deer dung in culture, A. Bizzi, 6.11.03, 103.4-Schio, CLSM 00795-XXXVIII. 39) CAMPOBASSO, Vinchiaturo, 500 m, on sheep dung in culture, F. Doveri, 13.10.04, 405.2-Vinchiaturo, CLSM 00795-XXXIX. 40) COSENZA, Longobucco-loc. Cozzo Pica, 1000 m, on sheep dung in culture, C. Lavorato, 10.8.04, 552.2-Longobucco, CLSM 00795-XL. 41) GROSSETO, Follonica, 0 m, on fallow deer dung in culture, F. Doveri, 5.05, 318.4-Follonica, CLSM 00795-XLI. 42) BELLUNO, Lorenzago-loc. Carera Rallo, 1600 m, on donkey dung, L. Levorato, 26.6.05, 030.3-Pieve di Cadore, CLSM 00795-XLII. 43) VICENZA, Monte Caldiero, on sheep dung in culture, A. Bizzi, 7.8.05, 125.3-Montebello Vicentino, CLSM 00795-XLIII. 44) VICENZA, Barbarano-S. Giovanni in Monte, on horse dung in culture, A. Bizzi, 7.8.05, 125.2-Longare, CLSM 00795-XLIV. 45) COSENZA, Longobucco-loc. Cozzo di Pesco, 1250 m, on hedgehog dung in culture, C. Lavorato, 5.5.05, 552.2-Longobucco, CLSM 00795-XLV. 46) LIVORNO, Bibbona-agriturismo La Pira, 50 m, on horse dung in culture, F. Doveri, 21.5.06, 294.2-Bibbona, CLSM 00795-XLVI. 47) LIVORNO, Bibbona-agriturismo La Pira, 50 m, on sheep dung in culture, F. Doveri, 21.5.06, 294.2-Bibbona, CLSM 00795-XLVII. 48) VENEZIA, Chioggia-bosco Nordio, 0 m, on fallow deer dung in culture, L. Levorato, 8.4.06, 148.2-Chioggia, CLSM 00795-XLVIII. 49) VICENZA, Valdagno-Passo Zovo, 600 m, on horse dung in culture, A. Bizzi, 18.5.06, 102.2-Valdagno, CLSM 00795-XLIX. 50) PISTOIA, Serravalle Pistoiese, 200 m, on duck dung in culture, F. Doveri, 5.5.07, 262.1-Pistoia, CLSM 00795-L. 51) VICENZA, Monte di Malo-loc. Faldo, 500 m, on horse dung, A. Bizzi, 2.12.06, 102.2-Valdagno, CLSM 00795-LI. 52) TRENTO, Folgarida-Malga Folgarida, 1600 m, on goat dung in culture, F. Doveri, 6.9.07, 042.2-Lago di Tovel, CLSM 00795-LII. 53) TRENTO, Vigo Rendena, 600 m, on horse dung in culture, F. Doveri, 6.9.07, 059.3-Tione di Trento, CLSM 00795-LIII.
TOTAL 53: sheep 13; horse 11; cattle 5; goat 5; fallow deer 3; wild rabbit 3; hen 2; roe deer 2; badger 1; beech marten 1; deer 1; donkey 1; duck 1; hedgehog 1; lizard 1; pigeon 1; wild pig 1.
REFERENCES: 9-13-15-18-36-37-39-40-57-59-62-64-78-93-98-101-114-122-124-127-128-130-135-144-148-150-155-157-160-166-171-177-192-193-195-205-209-212.

Podospora sibirica Grebenyuk

Nov. Sist. Niz. Rast. 8: 213, 1971.

REFERENCES: 82.

Schizothecium simile (E.C. Hansen) N. Lundq.

Symb. Bot. Upsal. 20 (1): 256, 1972. Figs.46-47

≡ *Sordaria similis* E.C. Hansen, Vidensk. Meddel. Naturhist. Foren.: 336, 1876.
≡ *Philocopra similis* (E.C. Hansen) Sacc., Syll. Fung. 1: 251, 1882.
≡ *Podospora similis* (E.C. Hansen) Niessl, Hedwigia 22: 156, 1883.
≡ *Pleurage similis* (E.C. Hansen) C. Moreau, Encycl. Mycol. 25 : 265, 1953.

EXAMINED MATERIAL: ITALY: 1) LECCO, Vendrogno, 1190 m, about fifty gregarious or isolated, superficial or partly immersed specimens, on horse dung, A. Bizzi, 7.6.03, 055.3-Premana, CLSM 015.03.
TOTAL 1: horse.
REFERENCES: 9-11-13-15-31-37-64-73-90-114-128-130-135-136-160-199-211.

Podospora spinulosa R.S. Khan & Cain

Can. J. Bot. 50: 1656, 1972.

REFERENCES: 64-65-97-102.

Schizothecium squamulosum (H. Crouan & P. Crouan) N. Lundq.

Symb. Bot. Upsal. 20 (1): 256, 1972.

≡ *Sordaria squamulosa* H. Crouan & P. Crouan, Fl. Finistère: 22, 1867.
≡ *Podospora squamulosa* (H. Crouan & P. Crouan) Niessl, Hedwigia 22 (10): 156, 1883.

EXAMINED MATERIAL: ITALY: 1) ROVIGO, isola di Albarella, 0 m, two superficial specimens on roe deer dung in culture, A. Bizzi, 16.11.02, 170.3-Porto Levante, CLSM 024.02.
TOTAL 1: roe deer.
REFERENCES: 31-56-64-114-155-206.

Schizothecium tetrasporum (G. Winter) N. Lundq.
Symb. Bot. Upsal. 20 (1): 256, 1972. Figs.48-49

≡ *Sordaria tetraspora* G. Winter, Hedwigia 10: 161, 1871.
= *Sordaria minuta* Fuckel var. *tetraspora* G. Winter, Abh. Nat. Ges. Halle 13 (1): 102, 1873.
≡ *Pleurage tetraspora* (G. Winter) Griffiths, Mem. Torrey Bot. Club, 11: 62, 1901.
= *Pleurage minuta* (Fuckel) Kuntze f. *tetraspora* C. Moreau, Encycl. Mycol.: 235, 1953.
≡ *Podospora tetraspora* (G. Winter) Cain, Can. J. Bot. 40: 460, 1962.

EXAMINED MATERIAL: ITALY: 1) PISA, Calambrone, 0 m, hundreds of gregarious, semi-immersed specimens on horse dung, F. Doveri, 31.1.96, 272.1-Marina di Pisa, MCVE 496. 2) VENEZIA, Caroman, 0 m, on wild rabbit dung in culture, F. Doveri, 5.97, 148.2-Chioggia, CLSM 01696 bis. 3) CATANIA, Parco dell'Etna, 1200 m, on wild rabbit dung in culture, G. Robich, 9.11.98, 612.2-Randazzo, CLSM 01696 ter. 4) CATANIA, parco dell'Etna, 1500 m, on wild rabbit dung, A. Bizzi, 9.11.98, 612.2-Randazzo, CLSM 01696 quater. 5) COSENZA, S. Demetrio Corone, 600 m, on hare dung in culture, C. Lavorato, 5.11.98, 552.4-S. Demetrio Corone, CLSM 01696 penta. 6) CAGLIARI, Villasimíus, 100 m, on sheep dung in culture, A. Bizzi, 9.11.99, 567.1-Villasimíus, CLSM 01696 esa. 7) PISA, Parco di S. Rossore, 0 m, on wild rabbit dung in culture, F. Doveri, 5.3.00, 272.1-Migliarino, CLSM 01696 epta. 8) RAVENNA, Lido di Classe, 0 m, on wild rabbit dung in culture, F. Doveri, 6.4.01, 241.3-Cervia, CLSM 01696 octo. 9) RAVENNA, Lido di Savio, 0 m, on wild rabbit dung in culture, F. Doveri, 6.4.01, 241.4-Lido di Savio, CLSM 01696 ena. 10) CAMPOBASSO, Civitacampomanaro, on wild pig dung, G. Robich, 26.10.01, 394.4-Lucito, CLSM 01696 deca. 11) ROVIGO, isola di Albarella, 0 m, on wild rabbit dung in culture, A. Bizzi, 16.11.02, 170.3-Porto Levante, CLSM 01696-XI. 12) COSENZA, Campana, 1000 m, on horse dung in culture, C. Lavorato, 8.6.02, 553.3-Bocchigliero, CLSM 01696-XII. 13) Verona, Monte Baldo, 1500 m, on wild rabbit dung in culture, L. Levorato, 20.6.03, 101.4-Malcesine, CLSM 01696-XIII.
TOTAL 13: wild rabbit 8; horse 2; hare 1; sheep 1; wild pig 1.
REFERENCES: 9-10-11-13-15-18-20-21-29-30-31-37-59-62-64-78-79-83-84-87-93-102-106-109-110-112-114-124-128-130-144-151-152-165-166-169-186-188-199-208.

Podospora trichomanes N. Lundq.
Symb. Bot. Upsal. 20 (1): 152, 1972.

REFERENCES: 64-93-114-187.

Podospora unicaudata (C. Moreau & M. Moreau ex G. Sm.) Cain
Can. J. Bot. 40 : 460, 1962.

≡ *Pleurage unicaudata* C. Moreau & M. Moreau, Bull. Soc. Bot. Fr. 102 : 123, 1955 (nom. nud.).
≡ *Pleurage unicaudata* C. Moreau & M. Moreau ex G. Sm., Trans. Brit. Mycol. Soc. 40: 488, 1957.

REFERENCES: 36-38-64-88-131-173.

Podospora venezuelensis Mirza & Cain
Can. J. Bot. 47: 2043, 1969.

REFERENCES: 64-128.

Podospora vertesensis (Tóth) N. Lundq.
Symb. Bot. Upsal. 20 (1): 202, 1972.

≡ *Andreanszkya vertesensis* Tóth, Sydowia 20: 173, 1967.

REFERENCES: 64-114-115-194.

Schizothecium vesticola (Berk. & Broome) N. Lundq.
Symb. Bot. Upsal. 20 (1): 256, 1972. Figs.50-51

≡ *Sphaeria vesticola* Berk. & Broome, Ann. Mag. Nat. Hist. 3 (3): 370, 1859.
= *Sordaria minuta* Fuckel, Jahrb. Nass. Ver. Naturk. 27-28: 44, 1873.
≡ *Hypocopra vesticola* (Berk. & Broome) Sacc., Syll. Fung. 1: 246, 1882.

= *Podospora minuta* (Fuckel) Niessl, Hedwigia 22: 156,1883.
= *Pleurage minuta* (Fuckel) Kuntze, Rev. Gen. Plant. 3 (3): 505, 1898.
= *Bombardia minuta* (Fuckel) Kirschst., Krypt. Flora Brandemburg 7 (2): 182, 1911.
≡ *Sordaria vesticola* (Berk. & Broome) Höhn., Ann. Mycol. 16: 45, 1918.
≡ *Podospora vesticola* (Berk. & Broome) Mirza & Cain, Can. J. Bot. 47: 2044, 1969.

EXAMINED MATERIAL: ITALY: 1) PISA, Calambrone, 0 m, dozens of gregarious, semi-immersed specimens on horse dung, F. Doveri, 29.1.96, 272.1- Marina di Pisa, MCVE 495. 2) BELLUNO, Forcella Negher (Falcade), 2280 m, on marmot dung in culture, E. Bizio, 2.9.97, 045.1-Cencenighe Agordino, CLSM 01596 bis. 3) TRENTO, Malga Montagna Grande, 1700 m, on roe deer dung in culture, F. Bersan, 26.9.97, 060.2-Pergine, CLSM 01596 ter. 4) GROSSETO, Principina terra, 0 m, on horse dung in culture, F. Doveri, 2.4.98, 331.3-Alberese, CLSM 01596 quater. 5) UDINE, Forra di Fleons, 1400 m, on deer dung in culture, F. Bersan & F. Doveri, 26.6.98, 031.1-Rigolato, CLSM 01596 penta. 6) PORDENONE, Barcis, 700 m, on deer dung in culture, G. Zecchin, 19.6.98, 064.1-Montereale Valcellina, CLSM 01596 esa. 7) BELLUNO, Tambre d'Alpago, on deer dung in culture, A. Bizzi, 18.7.98, 064.4-Farra d'Alpago, CLSM 01596 epta. 8) MESSINA, Novara di Sicilia (Loc. Serra Mandrazze), on cervine dung, G. Robich, 11.11.98, 613.4-Francavilla di Sicilia, CLSM 01596 octo. 9) CATANIA, Parco dell'Etna, 1800 m, on sheep dung in culture, A. Bizzi, 9.11.98, 612.2-Randazzo, CLSM 01596 ena. 10) FERRARA, S. Giustina, 0 m, on deer dung, A. Bizzi & G. Zecchin, 17.4.99, 187.1-Mesola, CLSM 01596 deca. 11) BRESCIA, Passo del Tonale, 2200 m, on deer dung, G. Robich, 8.9.99, 041.2-Ponte di Legno, CLSM 01596-XI. 12) TRENTO, Forcella Juribrutto, 2400 m, on sheep dung in culture, E. Bizio, 28.7.99, 045.4-Soraga, CLSM 01596-XII. 13) AOSTA, Passo Salati, 2970 m, on rock goat dung in culture, L. Levorato, 21.8.99, 071.3-Gressoney la Trinité, CLSM 01596-XIII. 14) BELLUNO, Tambre d'Alpago-bosco del Cansiglio, 1000 m, on cervine dung in culture, A. Bizzi, 17.7.99, 064.4-Farra d'Alpago, CLSM 01596-XIV. 15) NUORO, Tertenia (loc. Sucrabiolus), 150 m, on sheep dung in culture, A. Bizzi, 7.11.99, 541.2-Tertenia, CLSM 01596-XV. 16) CAGLIARI, Villasimíus, 100 m, on sheep dung in culture, A. Bizzi, 9.11.99, 567.1-Villasimíus, CLSM 01596-XVI. 17) PISA, Parco di S. Rossore, 0 m, on fallow deer dung, F. Doveri, 5.3.00, 272.2-Migliarino, CLSM 01596-XVII. 18) LIVORNO, Corbolone, 150 m, on horse dung in culture, G. Cacialli & F. Doveri, 14.4.00, 284.4-Collesalvetti, CLSM 01596-XVIII. 19) LIVORNO, Corbolone, 150 m, on sheep dung in culture, G. Cacialli & F. Doveri, 14.4.00, 284.4-Collesalvetti, CLSM 01596-XIX. 20) POTENZA, Sasso di Castalda, 1000 m, on sheep dung in culture, A. Bizzi, 10.11.00, 488.2-Brienza, CLSM 01596-XX. 21) BELLUNO, Tambre d'Alpago (loc. Pian Rosada), 1000 m, on deer dung in culture, L. Levorato, 8.7.00, 064.4-Farra d'Alpago, CLSM 01596-XXI. 22) AOSTA, Rio Endre, 2800 m, on roe deer dung in culture, L. Levorato, 24.8.00, 071.3-Gressoney la Trinité, CLSM 01596-XXII. 23) AOSTA, Passo Salati, 3000 m, on rock goat dung in culture, L. Levorato, 23.8.00, 071.3-Gressoney la Trinité, CLSM 01596-XXIII. 24) AOSTA, Rio Endre, 2800 m, on rock goat dung in culture, L. Levorato, 24.8.00, 071.3-Gressoney la Trinité, CLSM 01596-XXIV. 25) AOSTA, Q. Sella refuge, 3100 m, on hare dung in culture, L. Levorato, 26.8.00, 071.3-Gressoney la Trinité, CLSM 01596-XXVII. 26) AOSTA, lago Gabiet, 2350 m, on dung of an unidentified animal, L. Levorato, 23.8.00, 071.3-Gressoney la Trinité, CLSM 01596-XXVI. 27) LECCE, Vanze, 10 m, on cattle dung in culture, V. Sciurti & F. Doveri, 23.11.01, 513.4-S. Foca, CLSM 01596-XXVIII. 28) LECCE, Vanze, 10 m, on goat dung in culture, V. Sciurti & F. Doveri, 23.11.01, 513.4-S. Foca, CLSM 01596-XXIX. 29) L'AQUILA, Campo di Giove, 1100 m, on goat dung in culture, E. Bizio, 20.9.01, 370.3-Cansano, CLSM 01596-XXX. 30) COSENZA, Fagnano Castello, 800 m, on roe deer dung in culture, C. Lavorato, 23.10.01, 551.4-Fagnano Castello, CLSM 01596-XXXI. 31) MACERATA, Pintura di Bolognola, 1600 m, on wild rabbit dung, F. Doveri, 3.5,02, 325.1-Bolognola, CLSM 01596-XXXII. 32) BELLUNO, Lorenzago, 900 m, on roe deer dung in culture, A. Bizzi, 22.7.02, 030.3-Pieve di Cadore, CLSM 01596-XXXIII. 33) ROVIGO, isola di Albarella, 0 m, on roe deer dung in culture, A. Bizzi, 16.11.02, 170.3-Porto Levante, CLSM 01596-XXXIV. 34) COSENZA, Acri, 1000 m, on wild pig dung, C. Lavorato, 10.5.02, 552.3-Acri, CLSM 01596-XXXV. 35) COSENZA, Tarsia, 300 m, on goat dung in culture, C. Lavorato, 2.5.02, 543.2-Spezzano Albanese, CLSM 01596-XXXVI. 36) PISA, S. Ruffino, 50 m, on sheep dung in culture, F. Doveri, 22.3.03, 284.1-Casciana Terme, CLSM 01596-XXXVII. 37) REGGIO CALABRIA, Passo Petrulli (Aspromonte), 1100 m, on sheep dung in culture, F. Doveri, 17.10.03, 602.4-Santo Stefano in Aspromonte, CLSM 01596-XXXVIII. 38) BELLUNO, Passo Croce d'Aune, 2000 m, on roe deer dung in culture, A. Bizzi, 22.6.03, 062.3-Fonzaso, CLSM 01596-XXXIX. 39) BELLUNO, Passo Croce d'Aune, 2000 m, on sheep dung , A. Bizzi, 22.6.03, 062.3-Fonzaso, CLSM 01596-XL. 40) PORDENONE, Pinedo (Val Settimana), 1200 m, on deer dung in culture, A. Bizzi, 27.7.03, 047.2-Claut, CLSM 01596-XLI. 41) VERONA, Molina, 800 m, on horse dung in culture, A. Bizzi, 18.9.03, 101.2-Dolcè, CLSM 01596-XLII. 42) PORDENONE, Pinedo (Val Settimana), 1300 m, on roe deer dung in culture, A. Bizzi, 27.7.03, 047.2-Claut, CLSM 01596-XLIII. 43) VICENZA, Enego, 850 m, on horse manure, F. Doveri, 3.6.04, 083.4-Arsié, CLSM 01596-XLIV. 44) CAMPOBASSO, Campitello di Sepino, 1350 m, on horse dung in culture, F. Doveri, 14.10.04, 405.2-Vinchiaturo, CLSM 01596-XLV. 45) CAMPOBASSO, Vinchiaturo, 500 m, on sheep dung in culture, F. Doveri, 13.10.04, 405.2-Vinchiaturo, CLSM 01596-XLVI. 46) CAMPOBASSO, S. Massimo, 650 m, on roe deer dung in culture, A. Bizzi, 14.10.04, 405.3-Boiano, CLSM 01595-XLVII. 47) COSENZA, S. Fili-loc. Carrera, on sheep dung in culture, C. Lavorato, 16.11.04, 559.1-Rende, CLSM 0196-XLVIII. 48) VICENZA,

Sarego-Monte Cocco, 250 m, on sheep dung, A. Bizzi, 13.4.05, 125.2-Longare, CLSM 01596-XLIX. 49) BELLUNO, Tambre d'Alpago-Foresta del Cansiglio-loc. Pian Rosanda, 1000 m, on deer dung in culture, A. Bizzi, 16.7.05, 064.4-Farra d'Alpago, CLSM 01596-L. 50) VERONA, Erbezzo-Parco della Lessinia-Malga Lessinia, 1550 m, on horse dung in culture, A. Bizzi, 1.6.06, 102.3-Bosco Chiesanuova, CLSM 01596-LI. 51) FERRARA, Mesola-loc. Lido di Volano, 0 m, on horse dung in culture, A. Bizzi, 9.11.06, 187.1-Mesola, CLSM 01596-LII. 52) TRENTO, Malga di Sadron, 1450 m, on cattle dung in culture, F. Doveri, 8.9.07, 042.1-Malé, CLSM 01596-LIII. 53) TRENTO, Dimaro-Malghetta, 1100 m, on cattle dung in culture, F. Doveri, 8.9.07, 042.1-Malé, CLSM 01596-LIV.
TOTAL 53: sheep 12; deer 10; horse 8; roe deer 8; cattle 3; goat 3; rock goat 3; fallow deer 1; hare 1; marmot 1; unidentified animal 1; wild pig 1; wild rabbit 1.
REFERENCES: 3-4-9-11-14-18-20-21-27-30-31-37-59-62-63-64-77-83-84-109-114-122-128-130-135-144-149-191-192-193-195-199-212.

Schizothecium vratislaviense (Alf. Schmidt) Doveri & Coué

Doc. Mycol., in press. Figs.52-53

≡ *Sordaria vratislaviensis* Alf. Schmidt, Verbreit. coproph. Pilze Schlesiens: 32, 1912.
= *Sordaria fimbriata* A. Bayer, Acta Soc. Sci. Nat. Moraviae 1: 111, 1924.
= *Bombardia lunata* Zickler, Planta 22: 573, 1934.
= *Pleurage fimbriata* (A. Bayer) W.M. Page, Trans. Brit. Mycol. Soc. 40: 536, 1957.
= *Podospora fimbriata* (A. Bayer) Cain, Can. J. Bot. 40: 459, 1962.
= *Schizothecium fimbriatum* (A. Bayer) Barrasa, Contr. Est. Tax. Ecol. Corol. Ascom. Copr. España: 473, 1985.
≡ *Podospora vratislaviensis* (Alf. Schmidt) Doveri, Fungi Fimicoli Italici: 917, 2004.

EXAMINED MATERIAL: ITALY: 1) LECCE, Vanze, 10 m, about ten gregarious, superficial specimens, on horse dung in culture, V. Sciurti & F. Doveri, 24.11.01, 513.4-S. Foca, CLSM 006.02.
TOTAL 1: horse.
REFERENCES: 3-9-11-13-31-50-64-78-88-128-139-167-189.

Podospora xerampelina N. Lundq.

Symb. Bot. Upsal. 20 (1): 167, 1972.

REFERENCES: 64-114.

Worldwide Key to *Podospora* and *Schizothecium*

N.B.: a) In bold type the species present in Italy.
b) Unless noted otherwise, spore size is from protologues, or from author's measurements for the species present in Italy.
c) The following species have been omitted from the key: 1) *Podospora anamalayensis* V.G. Rao & Varghese (1989), since the illustration of the spores and perithecia in the protologue does not agree with the meagre description, and many features resemble those of a *Cercophora* sp. 2) *Podospora badia* Sultana (1988), because, according to LUNDQVIST (in litt.), it can be *Schizothecium dakotense*. 3) *Podospora cecropiae* C. Ram (1968), because the somewhat meagre original description and drawings match a *Cercophora* sp. 4) *Schizothecium papillisporum* (M. Sharma, 1976) L. Cai because, in agreement with KRUG & KHAN (1989), "*it would appear.....that it is an abnormal collection, or one with a number of abnormal features, that could be referrable to a number of taxa including P. papilliformis*". 5) *Schizothecium linguiforme* (Cain) L. Cai since, after LUNDQVIST (1972), we regard it a synonym of *S. dubium*. 6) *Podospora seminuda* (Griffiths) Mirza & Cain, because, according to MIRZA & CAIN (1969), it has many features of *Strattonia* Cif., and in our opinion it resembles both "*Strattoni≡ borealis* N. Lundq. and "*Sordari≡ septospora* Cain. 7) *Philocopra* (= *Podospora*) *coprophila* Bat. & Pontual, *Podospora hirsuta* P.A. Dang., *Podospora kilimandscharica* Alf. Schmidt, and *Podospora micrura* (Speg.) Niessl because, according to LUNDQVIST (1972), they are *nomina dubia*. 8) *Podospora laevis* Milovtz. (1937) since it has been described only once in literature and the original material was destroyed during the war. The spore gelatinous equipment was neither mentioned nor drawn in the protologue, so this species could belong to the group intergrading with *Zopfiella* G. Winter,

but the other microscopic features resemble those of sect. *Malinvernia* (Rabenh.) N. Lundq. 9) *Podospora phaeotricha* (Rehm) P. Syd. (nom. inval.) because the systematic position of this taxon is unclear: according to Lundqvist (in litt.), who studied the type material, "its spore septum is formed", like in most *Podospora* spp., "at the same time as the start of the brown pigmentation", whereas "its cell agglomerations on the perithecia remind of *Schizothecium* and some *Cercophora* species".

1) Perithecia glabrous or with filiform, rigid hairs, lacking swollen, articulated hairs. Exoperidium of polygonal cells (*textura angularis*). Spores usually late septate, with an empty, easily collapsing pedicel. True paraphyses, mixed with the asci, present. *Podospora* 27

1*) Perithecia with swollen hairs, both articulated and agglutinated to form triangular scales, often crowning the neck base, or sometimes with only swollen (non-agglutinated) hairs, or with single inflated and rounded, apically pointed, peridial cells. Exoperidium of (sub)globose cells (*textura globulosa* or *globulosa-angularis*). Spores early septate, with a plasma-filled, hardly collapsing pedicel. True filiform paraphyses absent, replaced by moniliform "jacket"paraphyses, enveloping the asci. *Schizothecium* 2

2) Features intergrading with those of *Zopfiella* (see GUARRO ET AL., 1991), i.e. spore head often inequilateral, pedicel ephemeral, caudae or sheaths absent or occasional and soon disappearing, and preference for growth on soil or plant debris, rather than on dung. Asci cylindrical, rarely clavate, with an indistinct or absent apical ring, and uniseriate, rarely biseriate spores, with an apical or subapical or even lateral germ pore. 3

2*) Spore head usually equilateral and with an apical germ pore. Pedicel persistent. Gelatinous equipment well developed, usually formed of two lash-like caudae, one upper at or near the apex of the spore head, and one lower at the end of the pedicel. Asci rarely with a distinct apical ring. Preference for dung. 8

3) Asci 4-spored. Spore head strongly inequilateral (one side flattened), 19-21 × 9.5-10.5 µm (17-24 × 10-13, MIRZA & CAIN, 1969), with a subapical germ pore. Pedicel 4-5 × 1-1.5 µm, clavate. Swollen agglutinated hairs very short, widespread but denser at the neck. On vegetables, soil, and dung. *Schizothecium inaequale* (Fig.34)

3*) Asci 8-spored. 4

4) Spore head 22-27.5 × 14-19.5 µm, hardly inequilateral, with an apical germ pore. Pedicel cylindrical to slightly obclavate, 8-14 × 2 µm. Swollen agglutinated hairs 10-18 × 7-16 µm, covering the upper part of perithecium and the neck base. On dead leaves of *Carpinus*. *Schizothecium carpinicola*

4*) Spore head smaller. 5

5) Spore head 18-22 × 11-13 µm, equilateral, with a subapical germ pore. Pedicel triangular, 3-7 × 3 µm. Asci clavate with biseriate spores. Neck base and upper portion of perithecium with scales of swollen agglutinated hairs, up to 80 × 30 µm. On dung, occasionally on soil. *Schizothecium nannopodale*

5*) Spore head smaller, strongly inequilateral. Pedicel obclavate. Asci cylindrical with uniseriate spores. Swollen hairs shorter. 6

6) Spore head 14-16 × 7.5-8.5 µm (17.5-19.5 × 7.5-8.5, SCHMIDT, 1912), flattened at one side, with an apical germ pore. Pedicel obclavate, 6-7.5 × 2-3 µm. Perithecial neck completely covered with swollen agglutinated hairs, up to 50 µm long, with strongly fimbriate apical cells. Usually on dung. *Schizothecium vratislaviense* (Figs.52-53)

6*) Spore head shorter, strongly curved and concave at one side. Swollen hairs shorter, with some fimbriate apical cells. 7

7) Spore head 11-13 × 6-8 µm, with an apical germ pore. Pedicel 2.5-5 × 1 µm. On seeds and dung. *Schizothecium curvisporum*

7*) Spore head 10-12 × 9-10 µm, with a lateral germ pore on the convex side. Pedicel 4-6 × 1-1.5 µm. Isolated from soil. *Podospora* (*Schizothecium*) *selenospora*

8) Asci 4-spored. Spores uniseriate. Pedicel cylindrical, sheathed by the lower cauda. 9

8*) Asci more than 4-spored. Spores uni- or bi- to multiseriate. Pedicel variously shaped. 10

9) Spore head 20-22 × 13-14.5 µm (19-22.5 × 11-13, MIRZA & CAIN, 1969; 19-24 × 12-14.5, LUNDQVIST, 1972; 18-23 × 11-13, BELL & MAHONEY, 1995). Pedicel slightly tapering and curved, 8-12 × 1.5-2 µm. Caudae solid, the upper subapical, the lower central. Sometimes 1-2 short, tranverse caudae are present at the pedicel base. Asci cylindric-clavate. Swollen hairs agglutinated in scales crowning the neck base, 35-75 µm long, but some shorter ones isolated and scattered over the remaining perithecium. Particularly on leporid dung, also on soil and rotten wood. *Schizothecium tetrasporum* (Figs.48-49)

9*) Spore head 12-14.5 × 7-9 µm. Pedicel 7 × 1.5 µm. Both caudae central. Asci cylindrical. Agglutinated hairs not described in detail. On leporid dung. *Schizothecium nanum*

10) Asci 8-spored, cylindrical to cylindric-clavate, occasionally clavate. Spores uni- or biseriate. Lower cauda usually enveloping the pedicel. 11

10*) Asci 16- to 64-spored, clavate to broadly clavate. Spores never uniseriate. Pedicel bare or enveloped by the lower cauda. 22

11) Perithecia with three kinds of vestiture: 1) wavy, filiform hairs (hyphoid); 2) rigid, filiform, often agglutinated hairs, denser at one side of the neck; 3) swollen, articulated and agglutinated hairs, sometimes reduced to mere rounded cells. Asci cylindric-clavate, enlarged and slightly flattened at the apex. Spores biseriate. Spore head 21-24 × 12.5-13.5 µm (18-21 × 11-14, MIRZA & CAIN, 1969; 22-23 × 11-13, LUNDQVIST, 1972), with a subapical germ pore. Pedicel obconical, 5-7 × 3.5-4 µm. Caudae solid, the upper 30-50 × 4.5-5 µm, the lower 20-35 × 3-3.5 µm. Particularly on cattle and horse dung. *Schizothecium pilosum* (Fig.41)

11*) Perithecial neck lacking rigid hairs. Asci not enlarged at the apex. Pedicel different in shape. 12

12) Spore head 17-22 × 9-12 µm, with an apical germ pore. Pedicel cylindrical to slightly obclavate, 4 × 1.5 µm. Both spore head and pedicel surrounded by a thick sheath. Caudae absent. Asci cylindrical with uniseriate spores. A collar of swollen agglutinated hairs, 25-60 × 7-12 µm, at the neck base. On horse dung. *Schizothecium oedotrichum*

12*) Spore lacking a thick sheath. Gelatinous equipment of caudae only, or cauda(e) and a thin sheath around the pedicel. 13

13) Swollen hairs short, agglutinated, articulated, placed in scales covering the upper two thirds of perithecia. Perithecia also with hyphoid hairs. Asci cylindrical, with uniseriate spores. Spore head 11-14 × 7-8 µm (12-13 × 6-8, LUNDQVIST, 1972), with a subapical germ pore. Pedicel triangular, 2 µm long. Caudae pulvinate to oblong, 4-11 µm long, the upper shorter. On cervine dung. *Schizothecium cervinum*

13*) Spore head larger, with an apical germ pore. Pedicel cylindrical. Caudae lash-like or (sub)cylindrical (possibly due to the vanishing end portion of the lash-like caudae). 14

14) Swollen hairs often non-agglutinated and not forming triangular scales at the neck base, but scattered, articulated (25-35 × 5-10 µm)or even reduced to single protruding cells. Perithecia usually lacking hyphoid hairs. Asci cylindrical with uniseriate spores. Spore head 19.5-21.5 × 11.5-12.5 µm (17-20 × 11-14, MIRZA & CAIN, 1969; 18-20 × 10.5-12, LUNDQVIST, 1972; 17-20 × 10-12, BELL & MAHONEY, 1995). Pedicel straight or sometimes slightly curved, slightly tapering or occasionally obtuse, 5-8.5 × 1.5-2 µm. Caudae central, 30-75 × 2-3. Several spores also with one or two short, lateral caudae at the pedicel base. On dung of several herbivores. *Schizothecium vesticola* (Figs.50-51)

14*) Swollen hairs agglutinated, making up a collar of triangular scales around the neck base. Perithecia with hyphoid hairs. Asci cylindric-clavate to occasionally clavate. Spore head larger. 15

15) Collar around the neck base short, less than 40 µm high. Spores uni- or biseriate. Caudae central. 16

15*) Collar higher. Spores biseriate. Upper cauda usually eccentric. 20

16) Perithecia 1300-1500 × 700-1000 µm. Spores uni- to biseriate. Spore head 58.5-68 × 29-36 µm. Pedicel slightly tapering, 7-11 × 2.5-3 µm. Upper cauda subcylindrical, more than 60 ×

4-5 µm, seemingly hollow, smooth or transversely wrinkled.
Schizothecium curvuloides var. *megasporum* (Figs.18-19)

16*) Perithecia and spore head smaller. 17

17) Spore head usually more than 30 µm long. 18
17*) Spore head less than 28 µm long. 19

18) Perithecia 750-1000 × 400-500 µm (BELL & MAHONEY, 1995). Spores biseriate above, uniseriate below. Spore head ellipsoidal to narrowly ellipsoidal, 33-41 × 17-20 µm (40-55 × 20-25, BELL & MAHONEY, 1995), often with fine transverse striations. Pedicel 4-6 × 1.5-2 µm. Lower cauda indistinct, 30-40 × 1.5-2. Upper cauda hollow, 50-80 × 6 µm. Preferably on cattle dung.
Schizothecium curvuloides var. *curvuloides*

18*) Perithecia 500-650 × 300-450 µm. Spores uni- or biseriate. Spore head often broadly ellipsoidal, 28.5-31.5 × 18-20 µm (29-33 × 19-22, MIRZA & CAIN, 1969; 30-38 × 21-27, LUNDQVIST, 1972; 31-37 × 21-27, BELL & MAHONEY, 1995). Pedicel 5-12 × 1.5-2 µm. Upper cauda up to 75 × 2.5-4 µm, sometimes seemingly longitudinally furrowed. Lower cauda narrower and shorter. On dung of various herbivores. *Schizothecium glutinans* (Fig.32)

19) Spores uniseriate or irregularly placed. Spore head 22-23.5 × 13.5-15 µm (20-24 × 12-17, MIRZA & CAIN, 1969; 22-24 × 14-15, LUNDQVIST, 1972; 21-24 × 13-15, BELL & MAHONEY, 1995). Pedicel 6-7 × 1-1.5 µm, sometimes somewhat enlarged at the apex. Upper cauda 25-30 × 4-6 µm, longitudinally furrowed. Lower cauda narrower and somewhat shorter, solid. On dung of various herbivores. *Schizothecium miniglutinans* (Figs.37-38)

19*) Spores uniseriate or biseriate. Spore head 22-25.5 × 14-17 µm (24-27 × 15-19, LUNDQVIST, 1972). Pedicel 12-19 × 1.5-2 µm, somewhat tapering and curved, surrounded by a narrow gelatinous sheath. Caudae solid. "On a variety of dung and also on decaying culms and herbs" (LUNDQVIST, in litt.). *Schizothecium squamulosum*

20) Swollen agglutinated hairs, crowning the neck base, no longer than 120 µm. Spore head 26-29.5 × 12.5-16.5 µm (23-28 × 13-16, MIRZA & CAIN, 1969; 26-30 × 13-17, LUNDQVIST, 1972; 22-29 × 13-18, BELL & MAHONEY, 1995). Pedicel 5.5-9 × 1.5-3 µm. Upper cauda solid, 35-80 × 3-5 µm; lower cauda narrower and shorter. One to three short, lateral caudae usually arising from the base of the pedicel. On various kinds of dung. *Schizothecium conicum* (Fig.15)

20*) Swollen hairs at the neck base more than 150 (500) µm long. Pedicel longer. 21

21) Swollen agglutinated hairs usually up to 350 µm long, concentrated at the neck base. Spore head 31.5-38 × 15.5-17 µm (31-40 × 15-23, MIRZA & CAIN, 1969; 32-37 × 18-20, LUNDQVIST, 1972; 31-37 × 16-20, BELL & MAHONEY, 1995). Pedicel 12-17 × 2-4 µm. Upper cauda 30-50 µm long, longitudinally veined, with some transverse constrictions; lower cauda narrower and somewhat shorter, solid. Sometimes other two short, lateral caudae arising from the base of the pedicel. Particularly on cattle dung. *Schizothecium aloides* (Figs.3-4)

21*) Swollen hairs entirely covering the perithecium and the neck base, 400-500 µm long. Spore head 18-26 × 12-15 µm. Pedicel 19.5-24.5 × 2-2.5 µm. Upper cauda 28.5-35 × 2.5-4.5 µm, sometimes hardly striate. Lower cauda absent (only a thin gelatinous sheath around the pedicel).No lateral cauda. On deer (Formosan sambar) dung.
Podospora (*Schizothecium*) *multipilosa*

22) Asci 16-spored. Lower cauda enveloping the pedicel. 23
22*) Asci more than 16-spored. Pedicel bare or enveloped. 24

23) Neck lacking rigid hairs, with short, swollen agglutinated hairs only. Spore head 27-36 × 16-20 µm (LUNDQVIST, 1972; 27-34 × 15-19, MIRZA & CAIN, 1969). Pedicel cylindrical, tapering, 10-15 × 7-9 µm. Upper cauda long, hollow, longitudinally striate; lower cauda shorter, not enveloping the pedicel. Additional sheath around the whole spore absent. On rodent dung, some records from deer, sheep and horse. *Schizothecium dubium*

23*) Neck both with short, swollen hairs, and long, rigid hairs. Spore head 31.5-38.5 × 16.5-19 µm (24-38 × 15-23, MIRZA & CAIN, 1969; 30-36 × 17-20, LUNDQVIST, 1972), completely surrounded by a broad, strongly granulose sheath. Pedicel subcylindric to obconical, sometimes somewhat curved, 7-8 × 1.5-2 µm. Caudae filamentous, granulose, 3-5 µm diam., up to 50 µm long, the lower enveloping the pedicel. Absolute preference for dung of domestic

herbivores. *Schizothecium simile* (Figs.46-47)

24) Asci 64-spored. Spore head 21-24.5 × 13-15 µm. Pedicel cylindrical, tapering, 5-8 × 1.5-2.5 µm. Upper cauda eccentric, 30-49 × 2.5-4 µm, flattened. Lower cauda not flattened, 30-56 × 1.5-2.5 µm. Neck base with short, swollen agglutinated hairs. Perithecia with hyphoid hairs. Usually on cattle dung. *Schizothecium formosanum*

24) Asci 32-spored. 25

25) Neck both with short, swollen hairs, and long, rigid hairs. Perithecia with hyphoid hairs. Spore head 31.5-38.5 × 16.5-19 µm (24-38 × 15-23, MIRZA & CAIN, 1969; 30-36 × 17-20, LUNDQVIST, 1972), completely surrounded by a broad, strongly granulose sheath. Pedicel subcylindric to obconical, sometimes somewhat curved, 7-8 × 1.5-2 µm. Caudae lash-like, filamentous, granulose, 3-5 µm diam., up to 50 µm long. Absolute preference for dung of domestic herbivores. *Schizothecium simile* (Fig.46-47)

25*) Neck with short, swollen agglutinated hairs only. Spores smaller. Pedicel cylindrical. 26

26) Perithecia with hyphoid hairs. Spore head 15.5-18.5 × 11-13.5 µm. Pedicel 4-5.5 × 1-5 µm. Caudae long, central, the lower not covering the pedicel. On donkey dung. *Schizothecium alloeochaetum*

26*) Hyphoid hairs absent (present in the Italian collections). Spore head 20-22 × 11.5-12.5 µm (18-24 × 13-15, MIRZA & CAIN, 1969; 22-25 × 13-15, LUNDQVIST, 1972; 21-25 × 12-15, BELL & MAHONEY, 1995). Pedicel 5-8 × 1.5-2 µm. Caudae 25-36 µm long, the upper longitudinally furrowed (or with an inner channel ?), the lower somewhat narrower, central, sheathing the whole pedicel. *Schizothecium dakotense* (Figs.20-21)

27) Perithecial neck without rigid hairs, with blackish, elongated tubercles at its base. Asci lacking an apical ring. Immature spores very elongated, cylindrical. Pedicel often longer than the spore head. Mature spores with longitudinally fibrillose caudae (but also see *P. brasiliensis*, n° 36). (sect. *Rhypophila* N. Lundq.) 28

27*) Neck glabrous or with rigid hairs, usually lacking a tuberculate base. Asci sometimes with an apical ring. Immature spores different in shape. Gelatinous equipment (sheaths and/or caudae) occasionally fibrillose, rarely even absent. 37

28) Asci 8-spored. Spores with a subapical, or rarely apical, germ pore. Preferential growth on bovine and equine dung. 29

28*) Asci more than 8-spored. Germ pore subapical. Gelatinous equipment always formed of caudae. Also on dung of other herbivores. 33

29) Spores without lower caudae, with a small, pulvinate apical cauda. Spore head 36-41 × 24-26 µm, with a subapical germ pore. Pedicel subcylindric, with the narrowest part near the septum, the largest near the tapering apex. Perithecia with sparse, rigid hairs. *Podospora aegyptiaca*

29*) Spores both with an upper and lower cauda(e). Perithecia glabrous or with hyphoid hairs. 30

30) Upper cauda subapical, lower cauda at the end of the pedicel, both lash-like. Spore head 29-42 × 16-21 µm, with an apical germ pore. Pedicel similar in shape to *P. aegyptiaca*. *Podospora dolichopodalis*

30*) Upper cauda apical, cylindrical to doliform. Lower caudae 2-3, or more, in number, attached to the base of the pedicel, usually curved and smaller than the upper one. Pedicel cylindrical. Spore head with a subapical germ pore. 31

31) Spore head 51-58 × 22.5-27.3 µm. At the present in Greek Aegean islands only. *Podospora macrodecipiens*

31*) Spore head smaller. 32

32) Spore head 34.5-42 × 19-23 µm (35-46 × 19-23, MIRZA & CAIN, 1969; 36-42 × 20-22, LUNDQVIST, 1972). Pedicel 55-73 × 7.2-8.5 µm (LUNDQVIST, 1972). Preferably in temperate zones. *Podospora decipiens* (Figs.24-25)

32*) Spore head 26-34 × 12-20 µm (MIRZA & CAIN, 1969; 27-33 × 17-18, LUNDQVIST, 1972). Pedicel 35-40 × 6-8 µm (MIRZA & CAIN, 1969), in many collections with a fugacious cauda at its end.

Tropical climates. *Podospora argentinensis*

33) Asci 16 or 32-spored. Spore head 31.5-36.5 × 18-21 µm (30-37 × 18-23, LUNDQVIST, 1972). Pedicel cylindrical, 42-65 × 5-8 µm (LUNDQVIST, 1972). Upper cauda cylindrical. Lower caudae 2-3 in number at the pedicel base. Clear preference for leporid droppings *Podospora pleiospora* (Fig.42)

33*) Asci more than 32-spored. 34

34) Asci 128-spored. Spore head 16-19 × 10-13 µm. Pedicel cylindrical, napiform at its tip, 20-60 µm long. Upper cauda 35 × 8 µm, at the apex of the spore head, with a cylindrical basal part. Lower caudae absent. On bovine dung. *Podospora bicolor*

34*) Asci 64-spored. Lower caudae present. 35

35) Spore head 28.5-33.5 × 18-19 µm (25-34 × 14-19, LUNDQVIST, 1972). Pedicel cylindrical, 30-40 × 5-7 µm. Upper cauda cylindrical, 18-45 × 5-7 µm, 2-3 lower caudae at the pedicel base. Preference for cattle and horse dung. *Podospora myriaspora* (Figs.39-40)

35*) Spore head smaller. Lower caudae differently placed. 36

36) Spore head 17-21 × 10-12 µm. Pedicel cylindrical to slightly clavate, 11-25 × 4-5 µm. Caudae seemingly not fibrillose, the upper one apical, lash-like, 15-26 × 2.5-3 µm. Lower caudae 1-2 short at the pedicel base, and a lash-like, central cauda, 10-20 × 2 µm, at the pedicel tip. On cattle dung. *Podospora brasiliensis*

36*) Spore head 18-21 × 10-14 µm (15-21 × 9.5-15, MIRZA & CAIN, 1969). Pedicel slightly clavate, 40 µm long. Caudae lash-like, 2 in number, 1 at each end. On dung of several domestic herbivores. *Podospora collapsa*

37) Immature spores narrowly ovoid or subfusiform. One cauda at each spore end. Pedicel apiculate or even missing. Asci lacking an apical ring (with a distinct ring in *P. papillata* (42*) and *P. papilliformis* (41), which we tentatively have placed in this section owing to the likeness of the other features). [sect. *Andreanszkya* (Tóth) N. Lundq.] 38

37*) Immature spores usually with different features. Pedicel well developed, although sometimes small. 43

38) Asci with 4 uniseriate spores. Spore head 52.5-57.5 × 23-27.5 µm (41-50 × 20-28, s.n. *P. apiculifera*, MIRZA & CAIN, 1969; 50-65 × 27-36, LUNDQVIST, 1972), with an apical germ pore. Pedicel triangular, 2-3 µm long. Caudae often more than 200 µm long, the upper one subapical, transversely segmented, longitudinally poly-channelled, and proximally furrowed, the lower similar but not furrowed. Perithecial neck with dense, isolated, rigid hairs. *Podospora australis* (Figs.9-10)

38*) Asci 8-spored. Caudae differently structured. 39

39) Spore head 140-200 × 55-70 µm, with four subapical germ pores. Pedicel triangular. Caudae elongated-triangular, longitudinally striate. Neck glabrous. *Podospora vertesensis*

39*) Spore head slightly to clearly smaller, with one apical germ pore. 40

40) Spore head 124-152 × 62-72 µm (110-132 × 46-54, MIRZA & CAIN, 1969; 110-125 × 46-57, LUNDQVIST, 1973). Pedicel triangular, 5-6 × 3.5-5 µm. Caudae transversely segmanted and longitudinally poly-channelled, both partially covering the spore head. Neck hairs in a palisade with wavy and septate ends. *Podospora gigantea* (Figs.29-30)

40*) Spore head clearly smaller. Caudae differently structured. Perithecial neck glabrous or with differently placed hairs. 41

41) Spores uniseriate, occasionally biseriate. Spore head 35-48 × 24-30 µm. Pedicel triangular, 5-10.5 × 7-12.5 µm. Caudae lash-like, striate, central. Asci slightly clavate. Neck glabrous. *Podospora deltoides*

41*) Spore head larger. Pedicel papillate. Neck hairy. 42

42) Spores biseriate. Spore head 54-58 × 30-33 µm. Pedicel 10 × 8 µm. Caudae 100-150 µm long, up to 15 µm wide, the upper subapical and grooved, the lower hollow. Asci clavate. Neck with short and straight hairs. *Podospora papilliformis*

42*) Spores uniseriate. Spore head 60-70 × 33-40 µm. Pedicel 8-16 × 4-8 µm. Caudae up to 80 ×

35 µm, indistinct. Asci cylindrical. Neck hairs quite rigid, hyaline-tipped, 100-150 µm long. *Podospora papillata*

43) Peridium rather coriaceous, with a thick gelatinous layer ("pseudobombardioid", LUNDQVIST, 1972). Perithecia covered all over (exceptionally on the upper part, or on the neck only) with short, rigid hairs, usually hyaline at their tips. Asci 8-spored, with a thin apical ring (absent in *P. minor* (49), LUNDQVIST in litt.). Immature spores clavate. Mature spores with a cauda at each end. (sect. *Podospora* s. LUNDQVIST) 44

43*) Peridium usually membranous, lacking a gelatinous layer. Asci with or without an apical ring. Immature spores clavate or dumb-bell shaped, rarely ovoidal. 50

44) Pedicel obconical. Spore head 25-31 × 12-15 µm (LUNDQVIST, 1972; 28-38 × 14-20, BELL & MAHONEY, 1997). Caudae central, hollow. Peridium with violet shades (BELL & MAHONEY, 1997). Especially on leporid dung. *Podospora appendiculata*

44*) Pedicel different in shape. Spore head usually larger. Upper cauda subapical. Peridium lacking violet shades. Usually on bovine or equine dung, sometimes non-coprophilous. 45

45) Spore head 50-55 × 27-30 µm (52-60 × 28-32, s.n. *P. fimicola*, MIRZA & CAIN, 1969; 48-60 × 27-31, LUNDQVIST, 1972). Pedicel obclavate. Caudae longitudinally poly-channelled. *Podospora fimiseda* (Figs.27-28)

45*) Spore head smaller. Caudae solid. 46

46) Pedicel clearly obclavate to pestle-shaped. Spores uni- or biseriate. 47

46*) Pedicel different in shape. Spores uniseriate. 48

47) Spores biseriate, head 41-52 × 25-27 µm (MIRZA & CAIN, 1969). Rigid hairs only on the neck. *Podospora pistillata*

47*) Spores uniseriate, head 32-41 × 17-21 µm. Rigid hairs on the whole perithecium. *Podospora minipistillata*

48) Pedicel cylindrical or even slightly tapering towards its apex. Spore head 34-40 × 19-23 µm (33-45 × 19-24, LUNDQVIST, 1972) with an eccentric germ pore. Only the upper part of perithecia with rigid hairs, the lower with hyphoid hairs. *Podospora perplexens*

48*) Pedicel usually slightly obclavate. Germ pore central. Rigid hairs placed all over the perithecium. 49

49) Spore head 30-45 × 20-24 µm (MIRZA & CAIN, 1969). Upper cauda with a groove (LUNDQVIST, in litt.). On corn stalks. *Podospora minor*

49*) Spore head 42-46 × 22-24 µm. Upper cauda seemingly lacking a groove. On equine dung. *Podospora lindquistii*

50) Features intergrading with those of *Zopfiella* G. Winter (see GUARRO ET AL., 1991), i.e. spore head often inequilateral, a small, but distinct, often ephemeral pedicel, no or occasional and soon disappearing caudae or sheaths, and preference for growth on soil or plant debris, rather than on dung. Asci 8- to polyspored. 51

50*) Spore head rarely strongly inequilateral. Pedicel usually larger. Gelatinous equipment well developed. Asci 4- to polyspored. Preference for dung. [sect. *Malinvernia* (Rabenh.) N. Lundq.] 62

51) Asci 8-spored. Spore head with an apical or subapical germ pore. 52

51*) Asci more than 8-spored. Spore head with an apical germ pore. 61

52) Spore head strongly inequilateral (flattened at one side). 53

52*) Spore head non- or slightly inequilateral. 56

53) Peridium reddish brown. Spores uniseriate. Spore head 22-25 × 15-17 µm. Pedicel reduced, 3-4 × 4 µm. Isolated from soil. *Podospora lautarea*

53*) Peridium without reddish shades. 54

54) Perithecia glabrous, with a very broad ostiole. Spores uniseriate. Spore head 12-14 × 7 µm, with a subapical germ pore. Pedicel obclavate, 3-5 × 1.5-2 µm. On dung. *Podospora minicauda*

54*) Spore head larger, with an apical germ pore. Pedicel more developed. 55

55) Perithecia glabrous. Spores biseriate. Spore head 23-36 × 9-15 µm (KRUG & KHAN, 1989; 24-31 × 10-13, MIRZA & CAIN, 1969). Pedicel obclavate, 13-18 × 3.5-4 µm. On rotten vegetables, soil, dung. *Podospora austroamericana*

55*) Perithecia with abundant hyphoid hairs. Spores uniseriate. Spore head 34-44 × 13-16 µm (Francis & Sparrow, 1984). Pedicel 15-21 × 2-3 µm, more or less cylindrical. On plants. *Podospora horridula*

56) Pedicel papillate. Asci cylindrical with uniseriate spores. Isolated from soil. 57

56*) Pedicel different in shape. Spores biseriate. 58

57) Perithecia with dense hyphoid hairs. Spore head 7-16.5 × 11.5-14.5. *Podospora sibirica*

57*) Perithecia glabrous. Spore head 30 × 15 µm. *Podospora roselliniella*

58) Pedicel trunate-conical with an elongated end. 59

58*) Pedicel obclavate to pestle-shaped. 60

59) Spore head 22-28 × 16-20 µm, barrel-shaped, with a wide, crateriform, apical germ pore. Caudae absent. Perithecia and neck base with some hyphoid hairs. *Podospora cupiformis*

59*) Spore head 24-29 × 14-15 µm, ellipsoidal, with a subapical germ pore. Caudae absent or fugacious, minute, one at each spore end. Perithecia with hyphoid hairs. Neck with rigid, sparse, sometimes tufted hairs. *Podospora decidua*

60) Perithecia and neck glabrous. Spore head 17-29 × 13-15 µm (22-31 × 13-17, GUARRO ET AL., 1991), with an apical germ pore. Isolated from felt. *Podospora unicaudata*

60*) Perithecia with hyphoid hairs. Neck glabrous or with rigid, long, sometimes tufted hairs. Spore head 15-22 × 11-14 µm, with a central or slightly eccentric germ pore. Pedicel occasionally surrounded by a fugacious sheath. On dung. *Podospora fibrinocaudata*

61) Asci 128-spored, clavate. Spore head 13-15 × 9-11 µm, equilateral, broadly ellipsoidal. Pedicel slightly obclavate, 9-12 µm long. Neck bare. On dung. *Podospora cochleariformis*

61*) Asci 1024-2048-spored, broadly fusiform. Spore head sometimes inequilateral, narrowly ellipsoidal, 13-14 × 7-9 µm. Pedicel broadly obclavate, 3.5-4 µm long. Neck with long, rigid hairs, both isolated and agglutinated in tufts. *Podospora prolifica*

62) Asci 4-spored. Spores uniseriate. Gelatinous equipment of two lash-like caudae, one upper at the apex of the spore head, one lower at the end of the pedicel. 63

62*) Asci 8- to poly-spored. Spores rarely uniseriate. Gelatinous equipment of sheaths and/or caudae. 65

63) Perithecial neck glabrous. Asci cylindrical. Spore head ellipsoidal to subglobose, 18-21 × 13-16 µm. Pedicel cylindrical, 18-21 µm long. Caudae long, central, variable in length. On cattle dung. *Podospora anomala*

63*) Neck with long tufts of rigid, agglutinated hairs. Asci cylindric-clavate. Spore head larger, ellipsoidal, slightly inequilateral. Pedicel cylindric, slightly tapering. Upper cauda eccentric. Particularly on cattle and horse dung. 64

64) Spore head 38-39 × 20-22 µm (34-40 × 18-20, MIRZA & CAIN, 1969; 35-40 × 18-19, LUNDQVIST, 1972). Pedicel 16-22 × 3.5-6 µm. Upper cauda longitudinally furrowed, 20-90 × 4-8.5 µm. Lower cauda solid, filiform, ephemeral. Three additional short, quite coiled caudae are placed at the pedicel base, near the septum. *Podospora anserina* (Figs.5-6)

64*) Spore head 30-32 × 16-20 µm (26-32 × 15-17.5, MIRZA & CAIN, 1969). Pedicel septate. Other details unknown. *Podospora comata*

65) Asci 8-spored. 66

65*) Asci more than 8-spored. 105

66) Spore head strongly inequilateral. 67

66*) Spore head equilateral or hardly inequilateral. 71

67) Spore head more than 30 µm long. Pedicel cylindrical. Upper cauda eccentric. Asci clavate

with biseriate spores. Perithecial neck with tufts of long, rigid, agglutinated hairs. 68

67*) Spore head less than 25 (-27) µm long. Pedicel cylindrical or obconical. Upper cauda central. Asci usually cylindrical with uniseriate spores. Neck glabrous or when hairy, then hairs with different features. 69

68) Spore head 34-36 × 16.5-19 µm (30-37 × 18-24, LUNDQVIST, 1972), with a subapical germ pore and the flattened side wholly covered with the upper gelatinous cauda. Pedicel cylindrical, 12-19 × 5-7 µm, surrounded by the lower cauda. Asci lacking an apical ring. On dung of several herbivores. *Podospora excentrica* (Fig.26)

68*) Spore head 30-40 × 19-23 µm, flattened or even slightly concave at one side, with an apical germ pore. Pedicel 19-24 × 4-5 µm. Upper cauda eccentric, channelled (?). Two additional lateral caudae at the pedicel base. Asci with an apical ring. On pademelon (or wallaby ?) dung. *Podospora fabiformis*

69) Neck glabrous, covered with black papillae. Spores uni- or biseriate. Spore head 15.5-17.5 × 9.5-10.5 µm, transversely 1-septate, with a subapical germ pore. Pedicel cylindrical, 10-12 × 3.5-4 µm. Upper and lower cauda solid, 20-25 × 3 µm. On partridge dung. Asci with an apical ring. *Podospora didyma*

69*) Neck hairy. Spores uniseriate. Spore head larger, not transversely septate, with an apical germ pore. Asci lacking an apical ring. 70

70) Neck with a fine weft of agglutinated, yellowish hairs. Spore head 20-27 × 15-17 µm. Pedicel obconical, 8-10 × 4-6 µm. Upper cauda channelled, lower cauda surrounding the pedicel. On wallaby dung. *Podospora ignota*

70*) Neck with dense, but non-agglutinated hairs. Spore head 20-25 × 13-16 µm. Pedicel cylindrical, tapering, 12-18 × 5-7 µm. Caudae solid. *Podospora trichomanes*

71) Gelatinous equipment fibrillose. Pedicel obclavate. Preferably on cattle dung. 72

71*) Gelatinous equipment not fibrillose. Pedicel variously shaped. Also on other kinds of dung. 75

72) Gelatinous equipment of sheaths only: multiple radial fibrils around the spore head, and a thin, solid sheath around the pedicel (LUNDQVIST, 1973). Spore head 30-55 × 19-25 µm. Pedicel 40-50 × 10-12 µm. Asci with a small apical ring. Perithecial neck with small tufts of rigid hairs. *Podospora immersa*

72*) Gelatinous equipment different in shape. Neck glabrous. 73

73) A fibrillose sheath around the whole spore head and pedicel, lengthening into a very long longitudinally fibrillose cauda at each spore end. Spore head 45-53 × 23-25 µm. Pedicel 28-36 × 5.5-8.5 µm (LUNDQVIST, 1973). Asci with a small apical ring. *Podospora longicaudata* (Fig.36)

73*) Sheath absent. 74

74) Two tufts of fibrillose, subapical, upper caudae, and one grooved, non-fibrillose, lash-like, lower cauda at the pedicel tip. Spore head 50-55 × 25-34 µm, with an apical germ pore. Pedicel 50-55 × 10-11 µm, sometimes transversely septate. Asci with a small apical ring. Peridium areolate. *Podospora ostlingospora*

74*) One upper cauda only, central and fibrillose. Lower cauda solid. Lateral, fibrillose caudae sometimes present at the pedicel base. Spore head 40-48 × 22-26 µm, with a subapical germ pore. Pedicel 30-38 × 13-16 µm. Asci lacking an apical ring. Peridium not areolate. On marsupial dung. *Podospora obclavata*

75) Gelatinous equipment of sheaths only, surrounding the spore head and the pedicel. Asci lacking an apical ring. Neck glabrous. 76

75*) Gelatinous equipment differently structured. Neck glabrous or with rigid hairs. 77

76) Asci clavate, long-stalked. Spores biseriate, with a thin sheath. Spore head 42-52.5 × 21-27.5 µm (34-45 × 19-25, LUNDQVIST, 1972). Pedicel cylindrical, tapering, 25-38 × 6-7 µm (LUNDQVIST, 1972). Particularly on cattle dung. *Podospora globosa* (Fig.31)

76*) Asci cylindrical to slightly clavate, short-stalked. Spores uniseriate, with a thick sheath.

Spore head 50-58 × 26-30 µm. Pedicel cylindrical, 12-20 × 4 µm. On kangaroo dung. *Podospora petrogale*

77) Gelatinous equipment of caudae and sheaths. Asci without an apical ring [except for *Podospora gwynne-vaughaniae*(87*). 78

77*) Gelatinous equipment of usually solid and lash-like caudae only. Asci with or without an apical ring. 88

78) Upper caudae 2-6 in number, subapical, cylindrical to horn-shaped, 25-40 × 10-20 µm, often partly fusing to each other and forming a lyre-shaped (LUNDQVIST, 1973) or horn-like body. Lower caudae absent. Lower part of the spore head an/or the whole pedicel surrounded by a thick, triangular or clavate sheath. 79

78*) Gelatinous equipment different in shape. 81

79) Spore head 42-48 × 27-30 µm. Pedicel 25-48 × 11-12 µm, obclavate, with alternated swellings and narrowings, and with a rounded or pointed tip. Sheath surrounding the pedicel and the basal part of the spore head. Neck occasionally with flexuous, agglutinated hairs. *Podospora papilionacea*

79*) Spore head smaller. Pedicel simply cylindric-obclavate. Sheath around the pedicel only. Perithecial neck with abundant, often tufted, rigid hairs. 80

80) Immature spores often septate. Spore head 23-30 × 13-17 µm. Pedicel 20-30 × 3-4 µm. *Podospora caligata*

80*) Immature spores not transversely septate. Spore head 24-32 × 16-22 µm. Pedicel 17-26 × 6.6-8.5 µm. *Podospora bicornis*

81) Sheath thick, surrounding the whole spore head and the basal part of the pedicel, apically lengthening into a distinct, cylindrical, tapering cauda. One lower cauda, elongated, irregular, surrounding the apical part of the pedicel. Spore head 33-43 × 18-21 µm. Pedicel cylindrical, slightly tapering, 16-20 × 5 µm. Perithecia with a purple tinge in the upper part. Neck with rigid, tufted hairs. *Podospora xerampelina*

81*) Sheath much more reduced. Caudae different in number and/or in structure. Perithecia lacking a purple tinge. 82

82) Sheath variable in thickness, sometimes absent or indistinct. One cauda at each spore end, lash-like, swelling in water. Additional caudae absent. 83

82*) Sheath thin, surrounding the pedicel and often the spore head, splitting into caudae at the pedicel apex. Upper caudae usually 4 in number, solid, composed of two strands in *P. alexandri* (85) and *P. austrohemisphaerica* (86). Additional short caudae present at the pedicel base. 85

83) Spore head 33-38 × 18-20 µm (28-38 × 18-23, LUNDQVIST, 1972), slightly inequilateral, with an apical germ pore. Pedicel cylindrical to narrowly obconical, 18-25 × 7.5-9 µm, not containing plasma remnants. Caudae solid, 70-160 × 6-15 µm, the upper subapical and proximally furrowed, the lower central, with a narrower furrow. Occasional presence of two indistinct gelatinous sheaths, the former covering the apical part of the spore head, the latter covering the end of the pedicel. Asci clavate, tapering above. Perithecial neck with long, rigid, often agglutinated hairs. *Podospora dasypogon* (Figs.22-23)

83*) Spore head smaller or larger. Pedicel containing plasma remnants. Caudae not furrowed, segmented, “intestine-like” when swelling. Asci rounded at their apices. 84

84) Spore head equilateral, 25-35 × 14-18 µm (MIRZA & CAIN, 1969; 26-35 × 14-19, LUNDQVIST, 1973), with a subapical germ pore (apical, LUNDQVIST, 1973). Pedicel 17-35 × 6-8 µm, swollen both in the middle and tip, often surrounded by a thin sheath (LUNDQVIST, 1973). Caudae solid, up to 180 × 35 µm, the upper eccentric, the lower central. Asci broadly clavate to saccate. Perithecial neck with rigid, agglutinated hairs. *Podospora prethopodalis*

84*) Spore head slightly inequilateral, 52-66.5 × 23.5-28.5 µm (50-68 × 22-32, LUNDQVIST, 1972), with a subapical germ pore. Pedicel obconical, 22-30 × 12-14 µm. Caudae central, longitudinally micro- and poly-channelled, up to 400 × 28 µm. The granulose base of the upper cauda and the apex of the spore head surrounded by a thick sheath. The lower

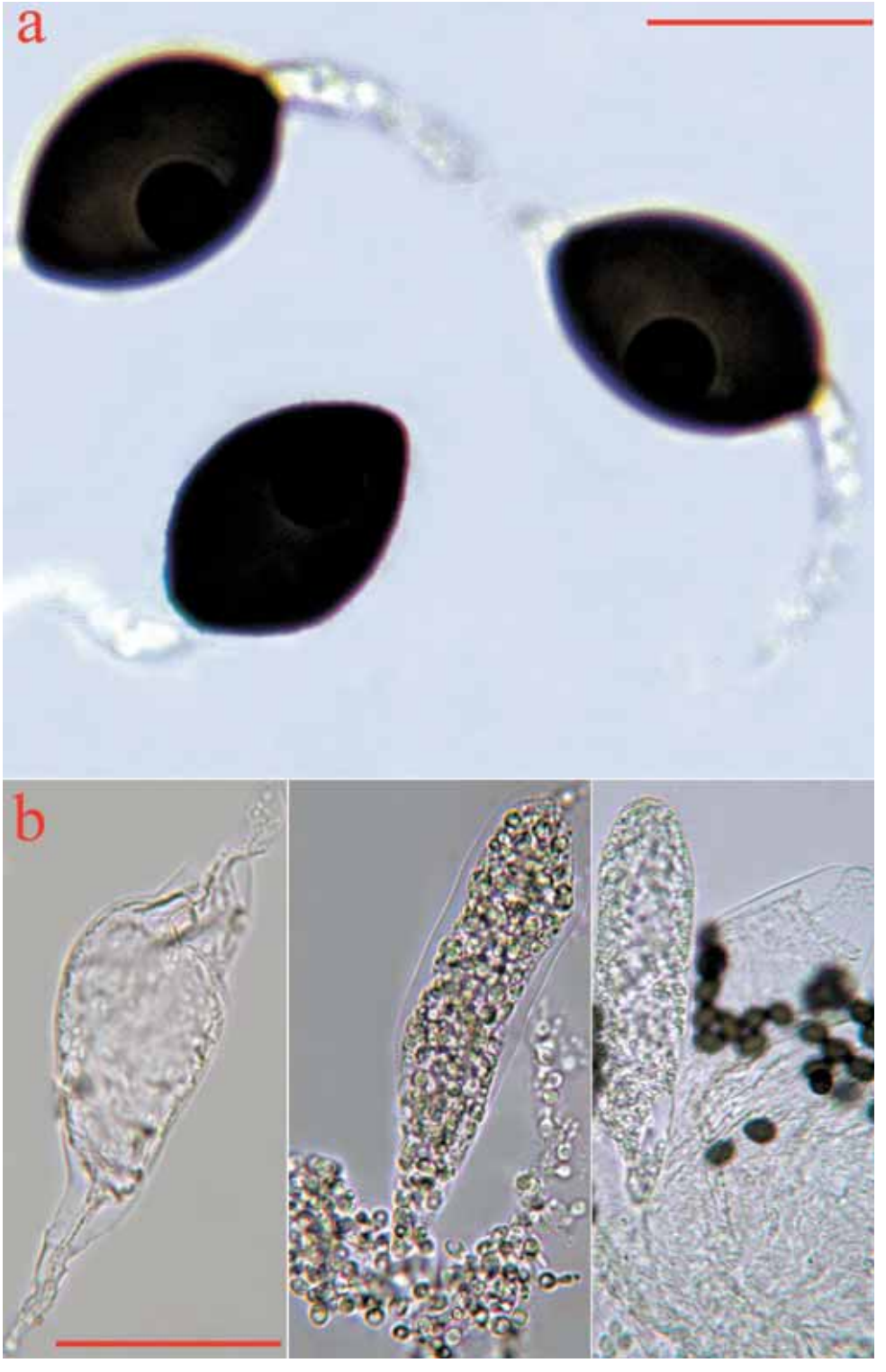

Fig. 17a-b. *Podospora curvicolla*: a = spores; b = polyspored asci in different stages. Scale bars: a = 12 µm; b = 100 µm.

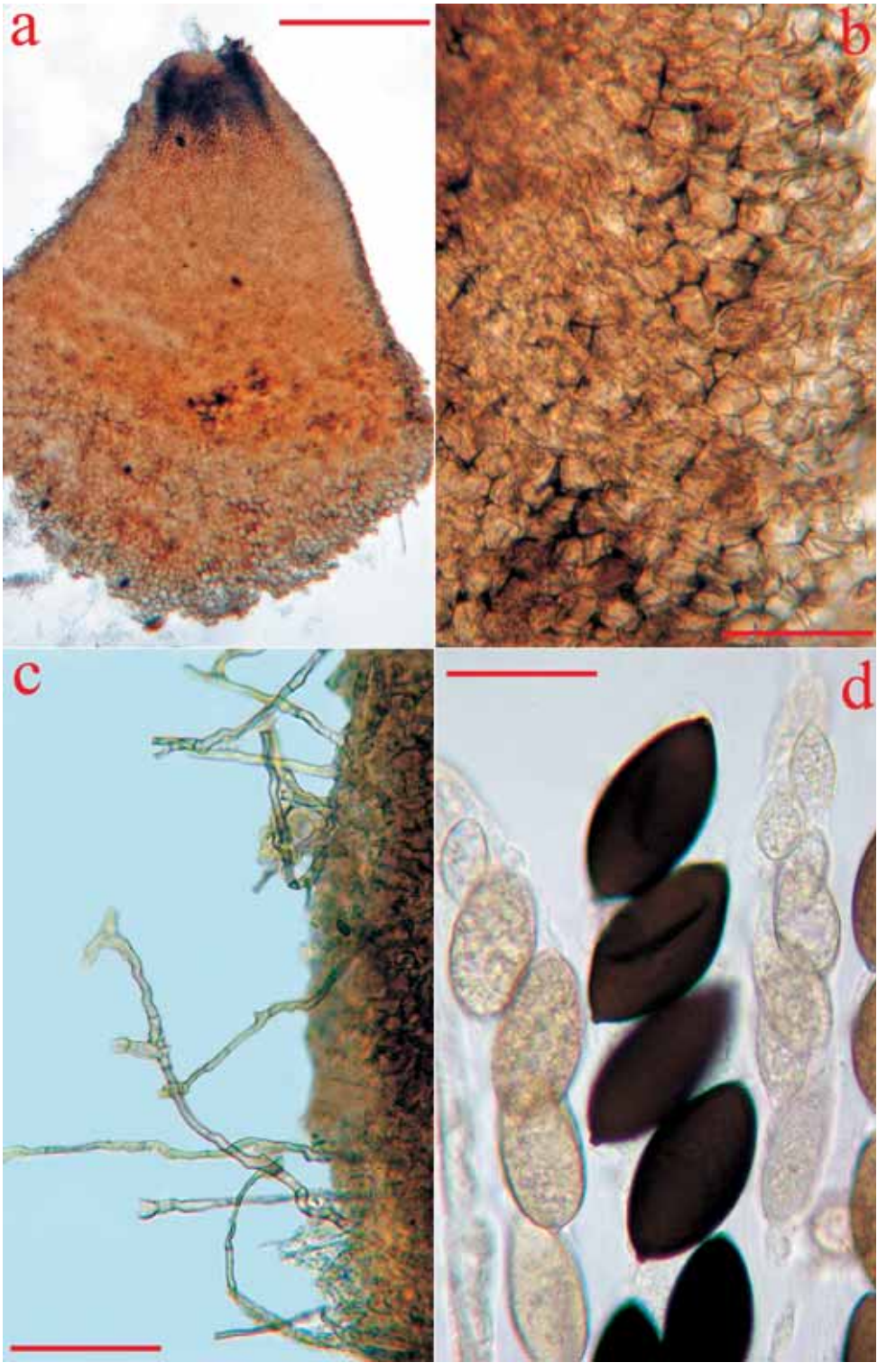

Fig. 18a-d. *Schizothecium curvuloides* var. *megasporum*: a = upper perithecial portion with an apical scale of swollen agglutinated hairs; b = detail of exoperidium (textura globulosa-angularis); c = exoperidial hyphoid hairs; d = 8-spored asci with spores in different stages. Scale bars: a = 300 µm; b-c = 30 µm; d = 40 µm.

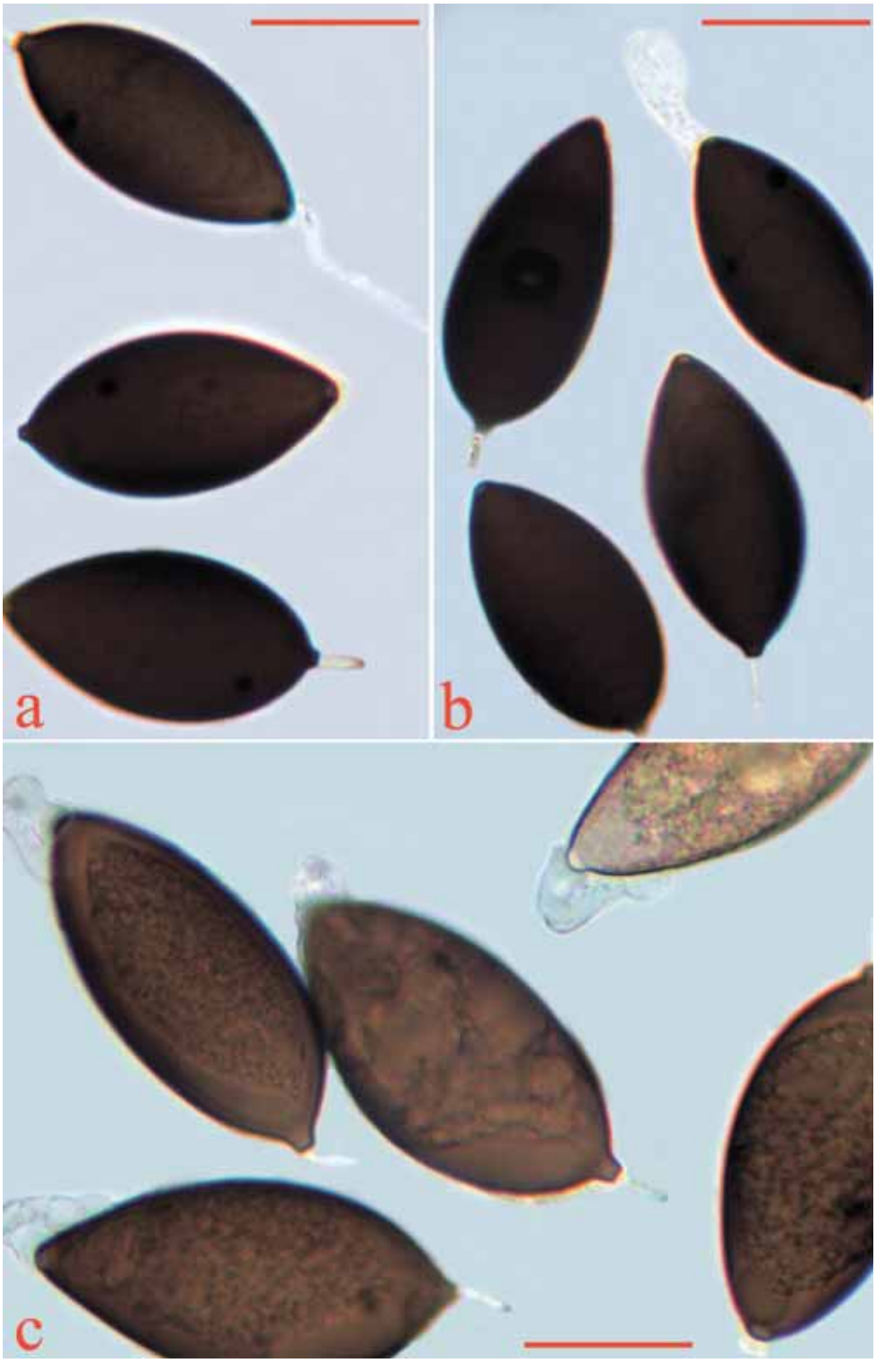

Fig. 19a-c. *Schizothecium curvuloides* var. *megasporum*: a-c = spores. Scale bars: a-b = 30 µm; c = 25 µm.

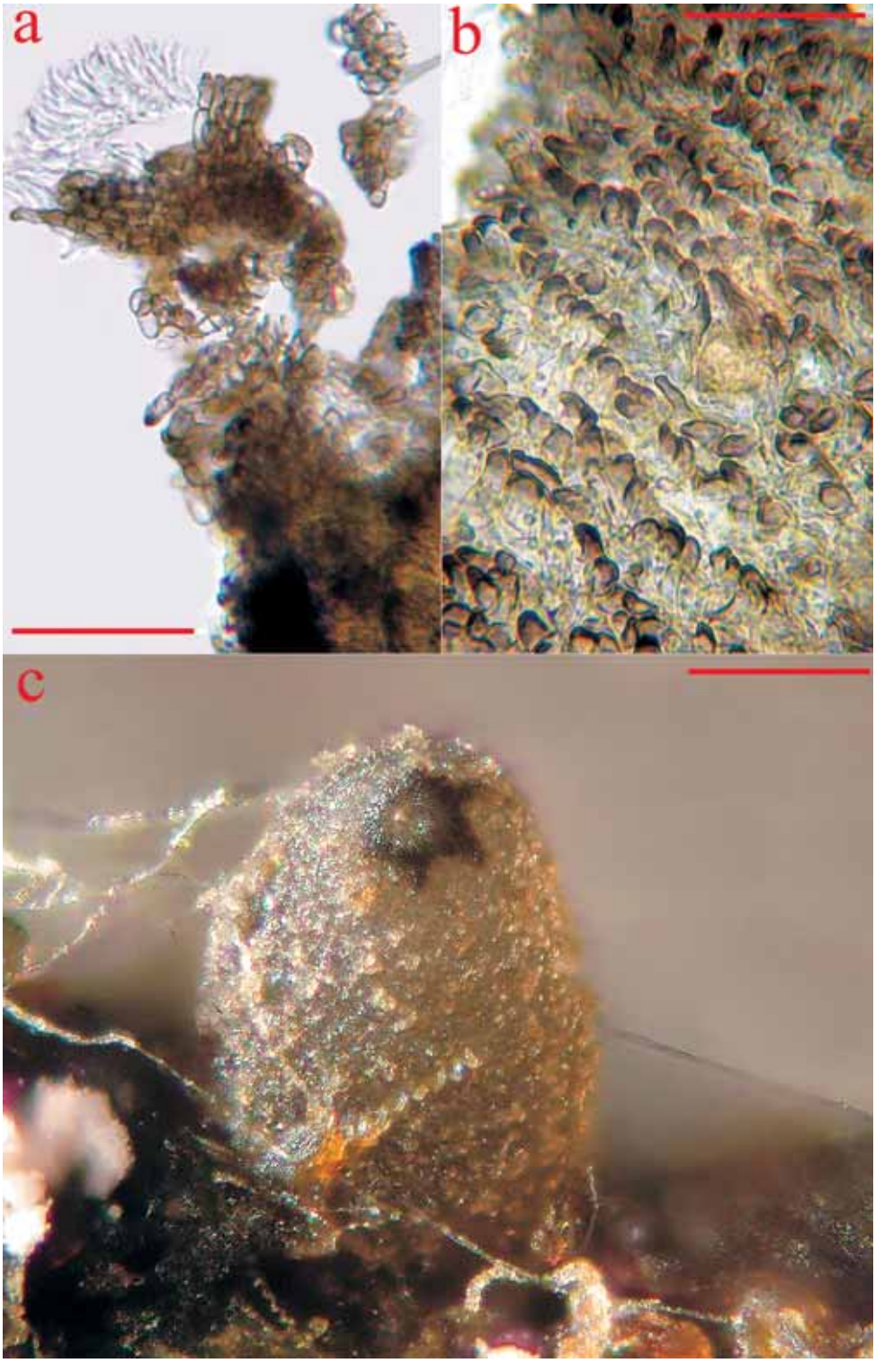

Fig. 20a-c. *Schizothecium dakotense*. a-b = swollen hairs (a = agglutinated and articulated at the neck; b = often isolated and non-articulated on the upper perithecial part); c = perithecioid ascoma with a black crown at the neck base. Scale bars: a = 60 µm; b = 50 µm; c = 200 µm.

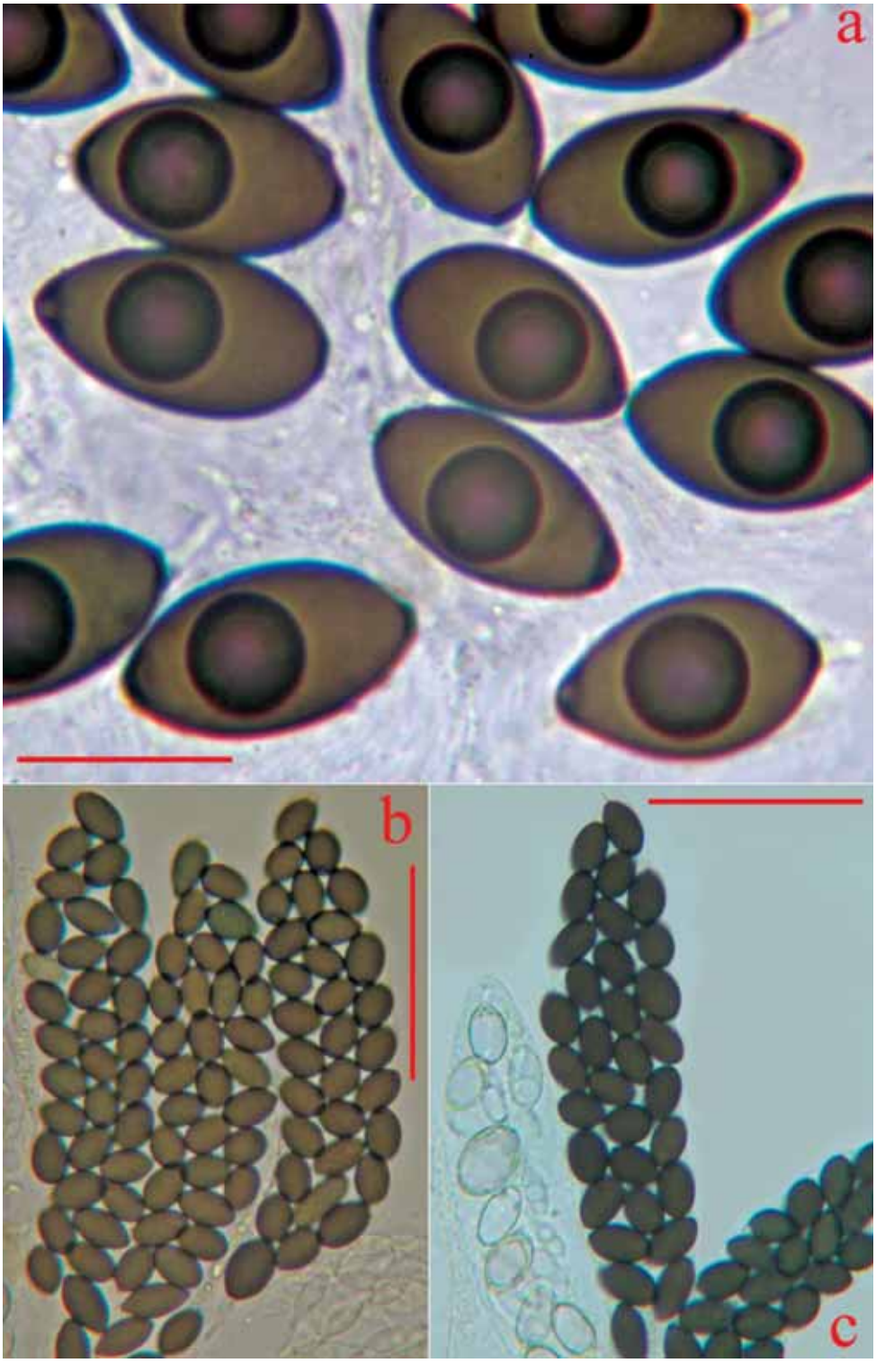

Fig. 21a-c. *Schizothecium dakotense*. a = mature spores; b-c = 32-spored asci with with spores in different stages. Scale bars: a = 15 µm; b-c = 70 µm.

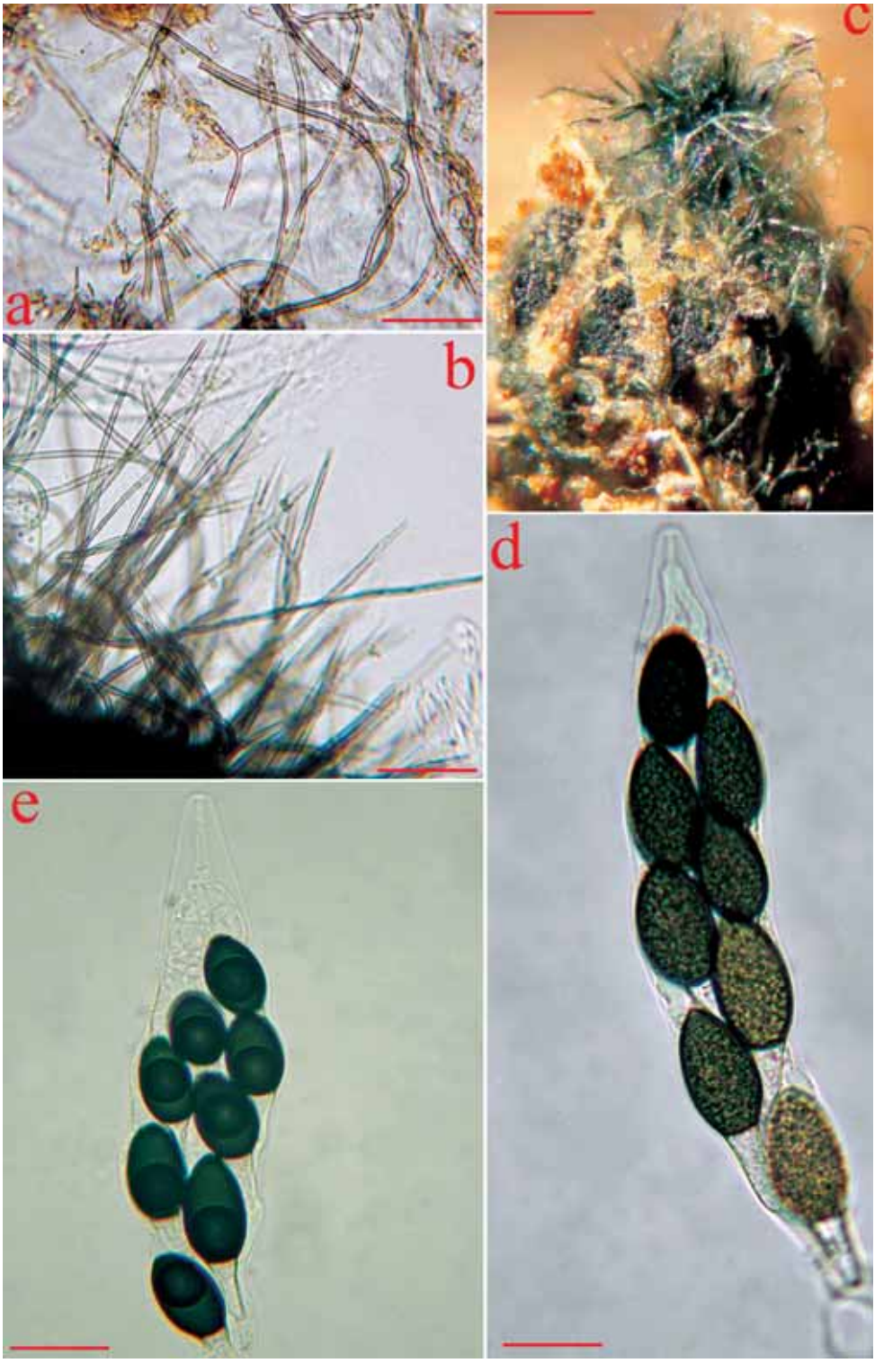

Fig. 22a-d. *Podospora dasypogon*. a = hyphoid hairs; b = rigid neck hairs; c = perithecioid ascoma with an hairy neck; d-e = 8-spored asci. Scale bars: a = 40 µm; b = 20 µm; c = 150 µm; d = 30 µm; e = 25 µm.

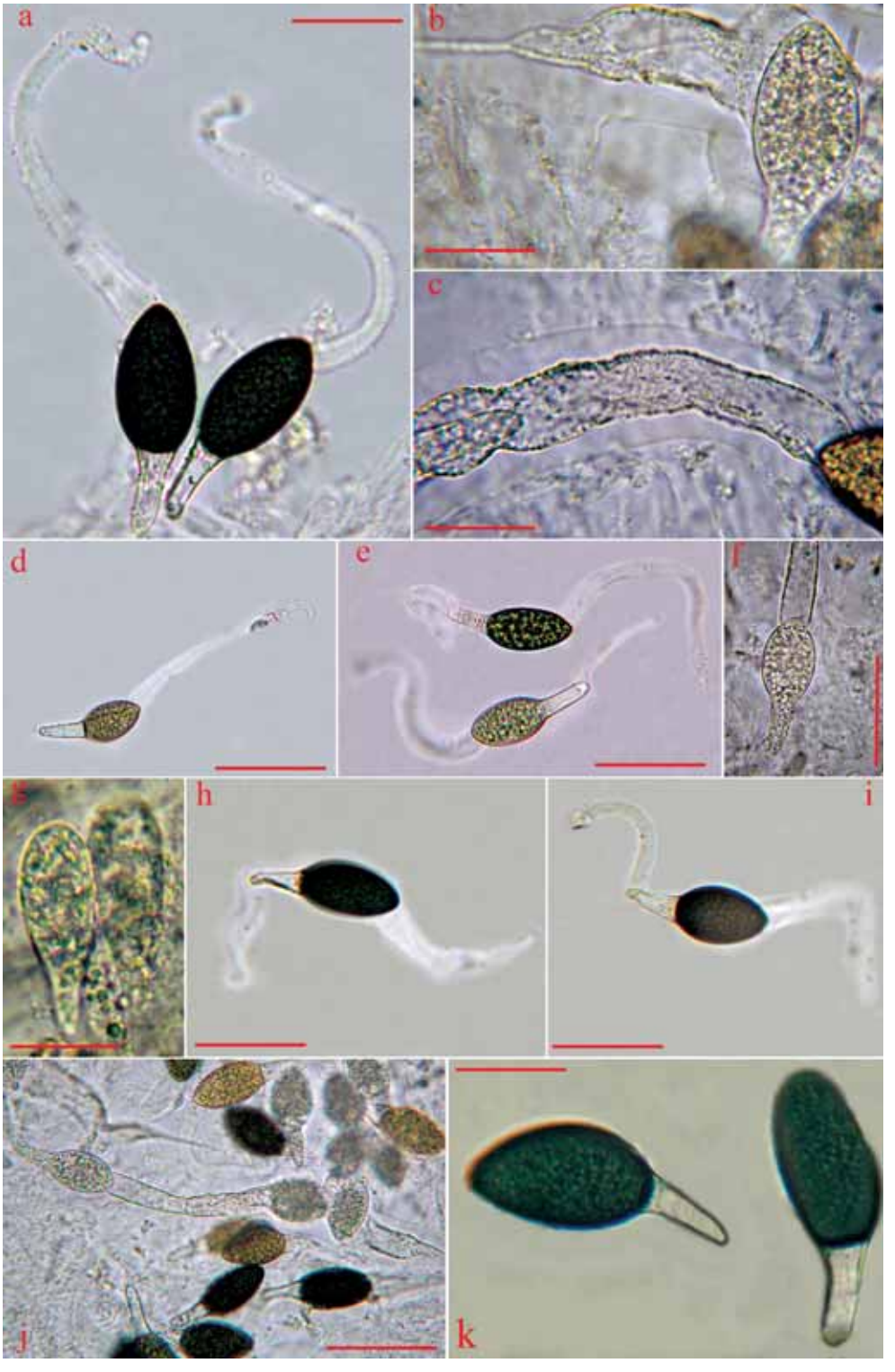

Fig. 23a-k. *Podospora dasypogon*. a-k = spores in different stages. Scale bars: a,g = 25 µm; b-c,k = 20 µm; d = 60 µm; e-f,h-j = 40 µm.

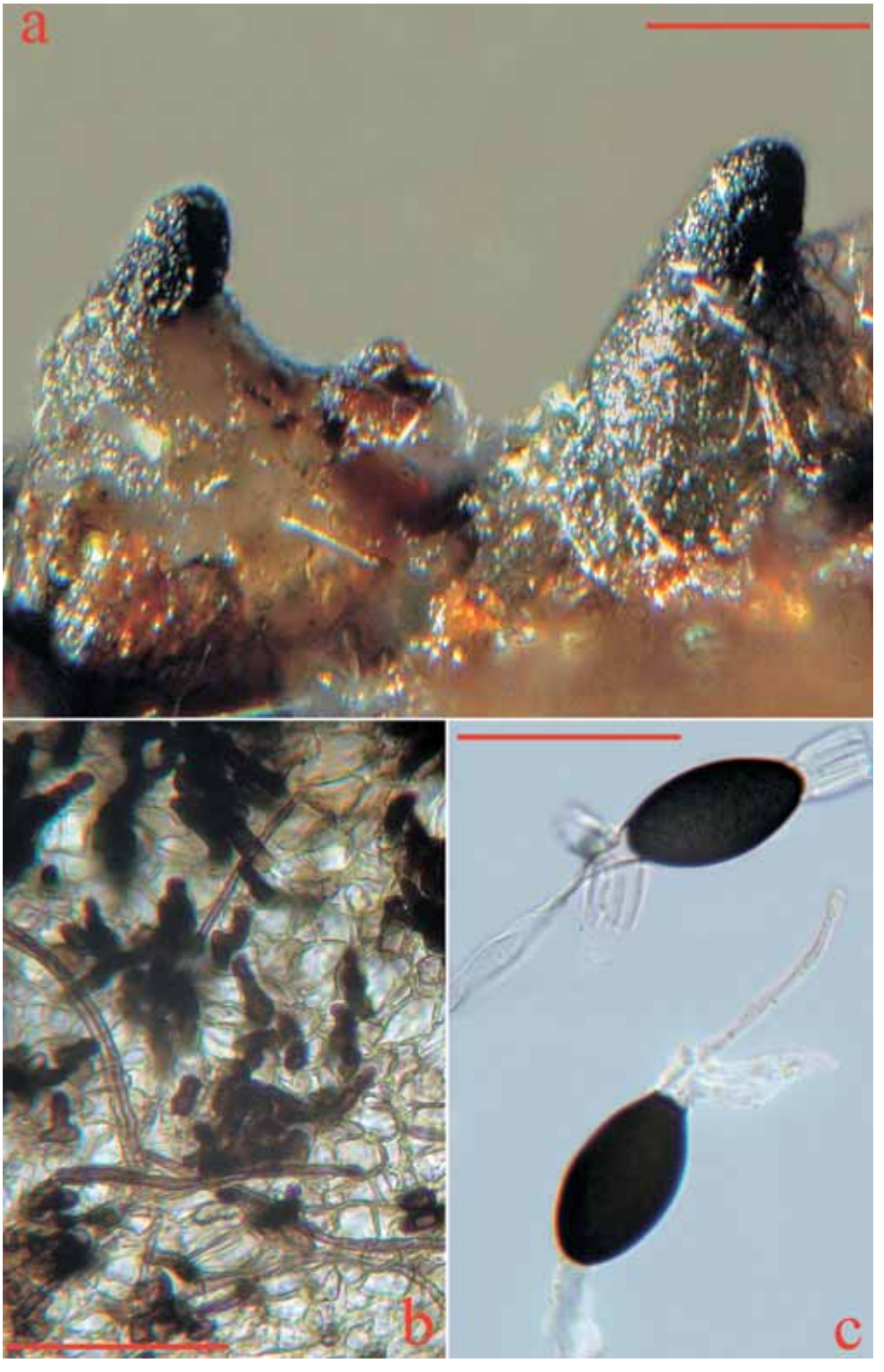

Fig. 24a-c. *Podospora decipiens*. a = perithecia with glabrous necks; b = detail of neck base with typical blac tubercles; c = mature spores with easily collapsing pedicels and fibrillose caudae. Scale bars: a = 300 µm; b = 40 µm; c = 50 µm.

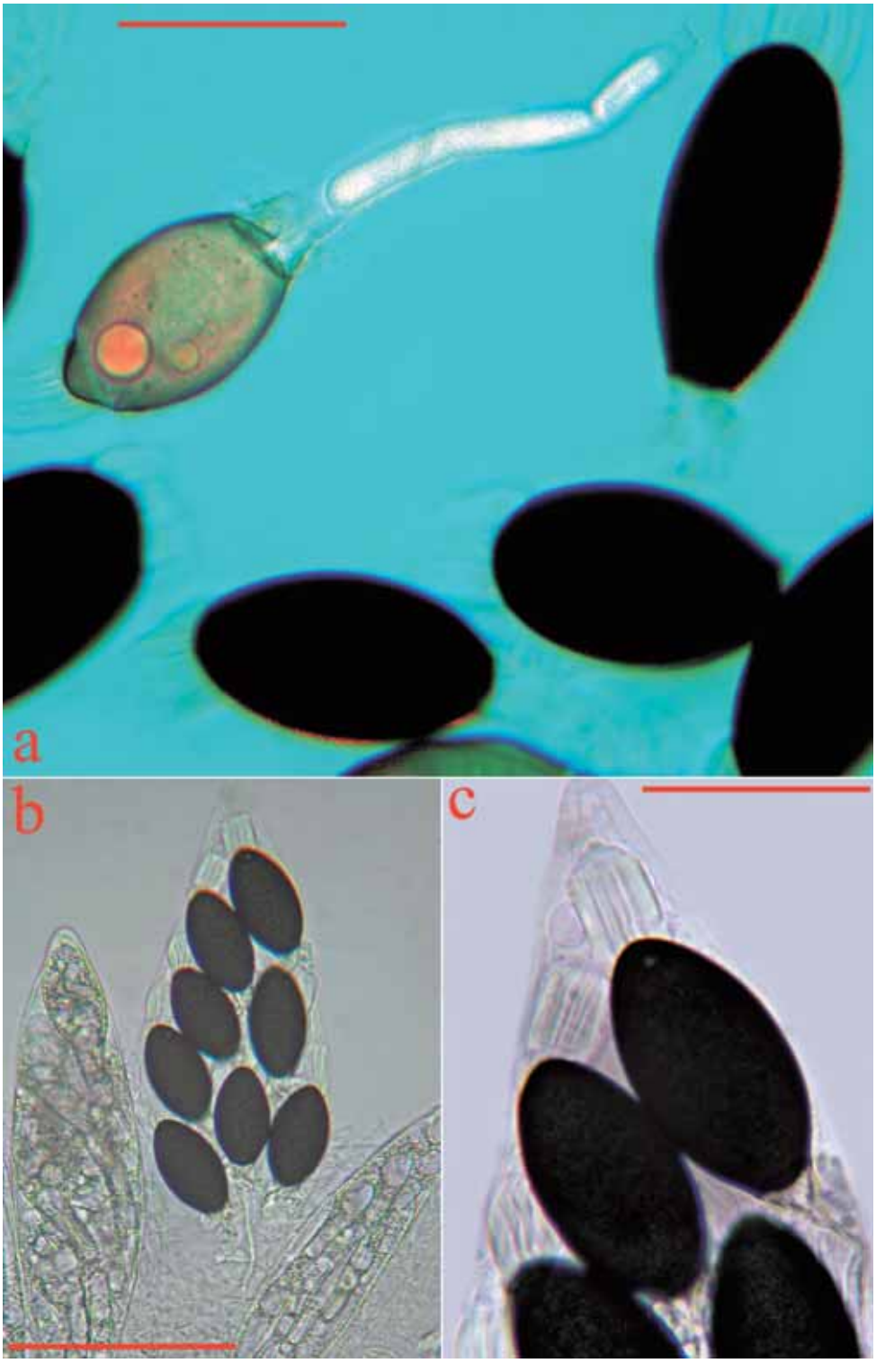

Fig. 25a-c. *Podospora decipiens*. a = spores in methyl blue; b-c = details of 8-spored asci. Scale bars: a = 25 µm; b = 80 µm; c = 30 µm.

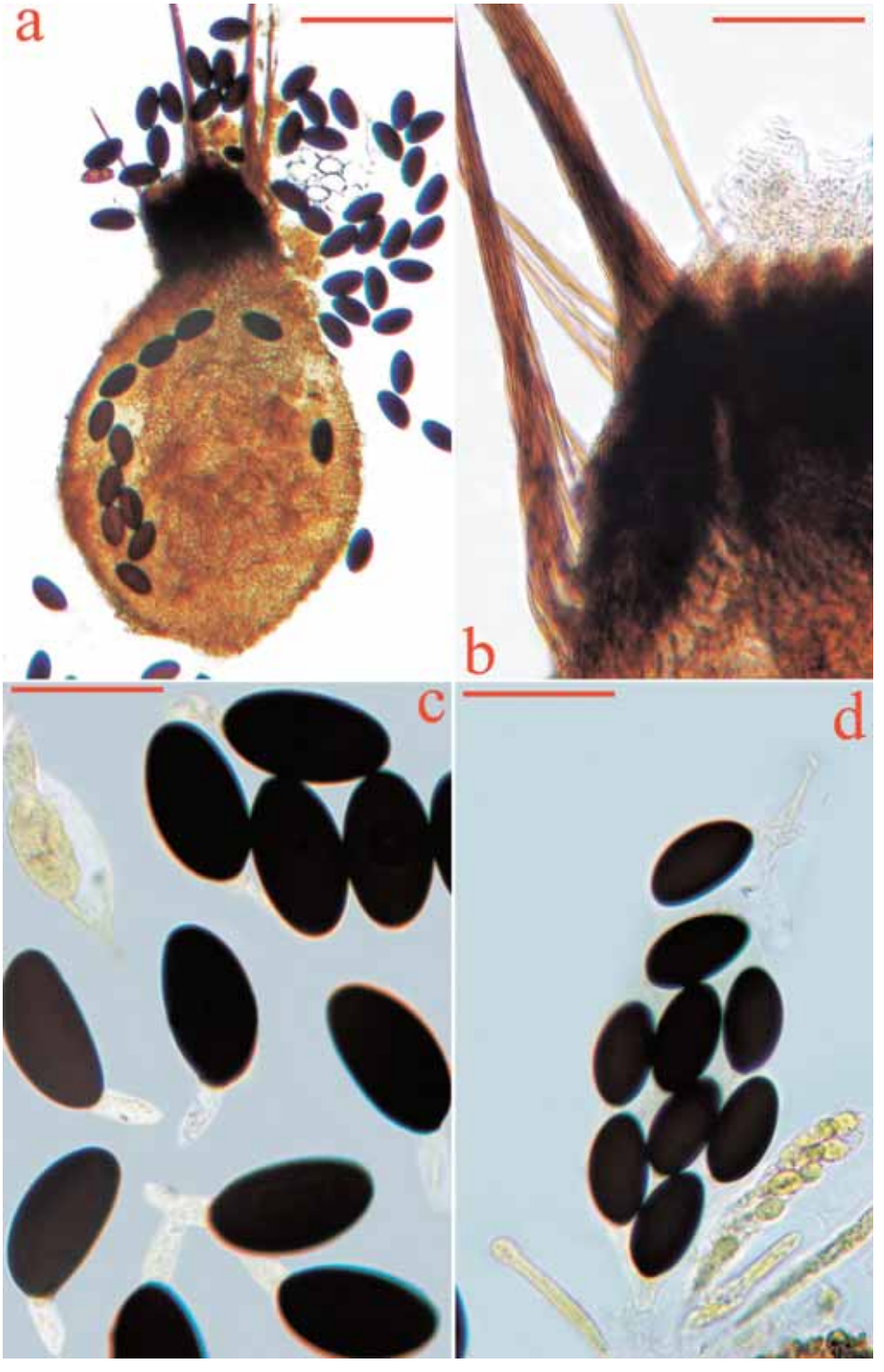

Fig. 26a-d. *Podospora excentrica*. a = perithecium with hairy neck; b = neck with rigid, agglutinated hairs; c = mature spores, and a single immature spore with caudae and a typical sheath on the flattened side; d = 8-spored asci with spores in different stages. Scale bars: a = 150 µm; b = 40 µm; c = 30 µm; d = 50 µm.

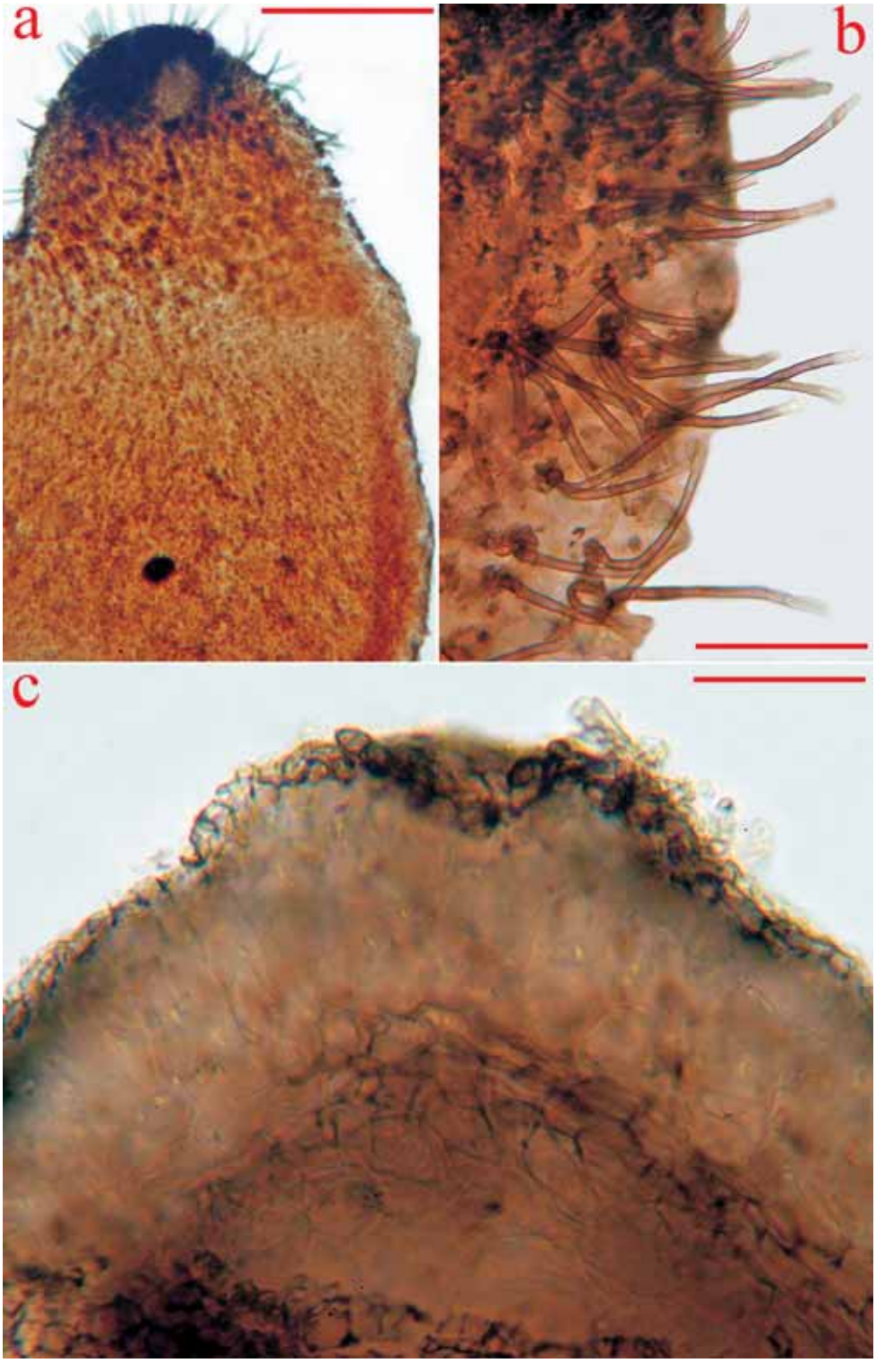

Fig. 27a-c. *Podospora fimiseda*. a = detail of hairy perithecium; b = peridial hairs; c = gelatinised middle peridial layer ("pseudo-bombardioid" peridium). Scale bars: a = 200 µm; b = 50 µm; c = 20 µm.

Fig. 28. *Podospora fimiseda*. Spores. Scale bar = 60 µm.

Fig. 29ab. *Podospora gigantea*. a = perithecium; b = detail of immature spores. Scale bars: a = 500 µm; b = 45 µm.

Fig. 30. *Podospora gigantea*. Spores in different stages. Scale bar = 70 µm.

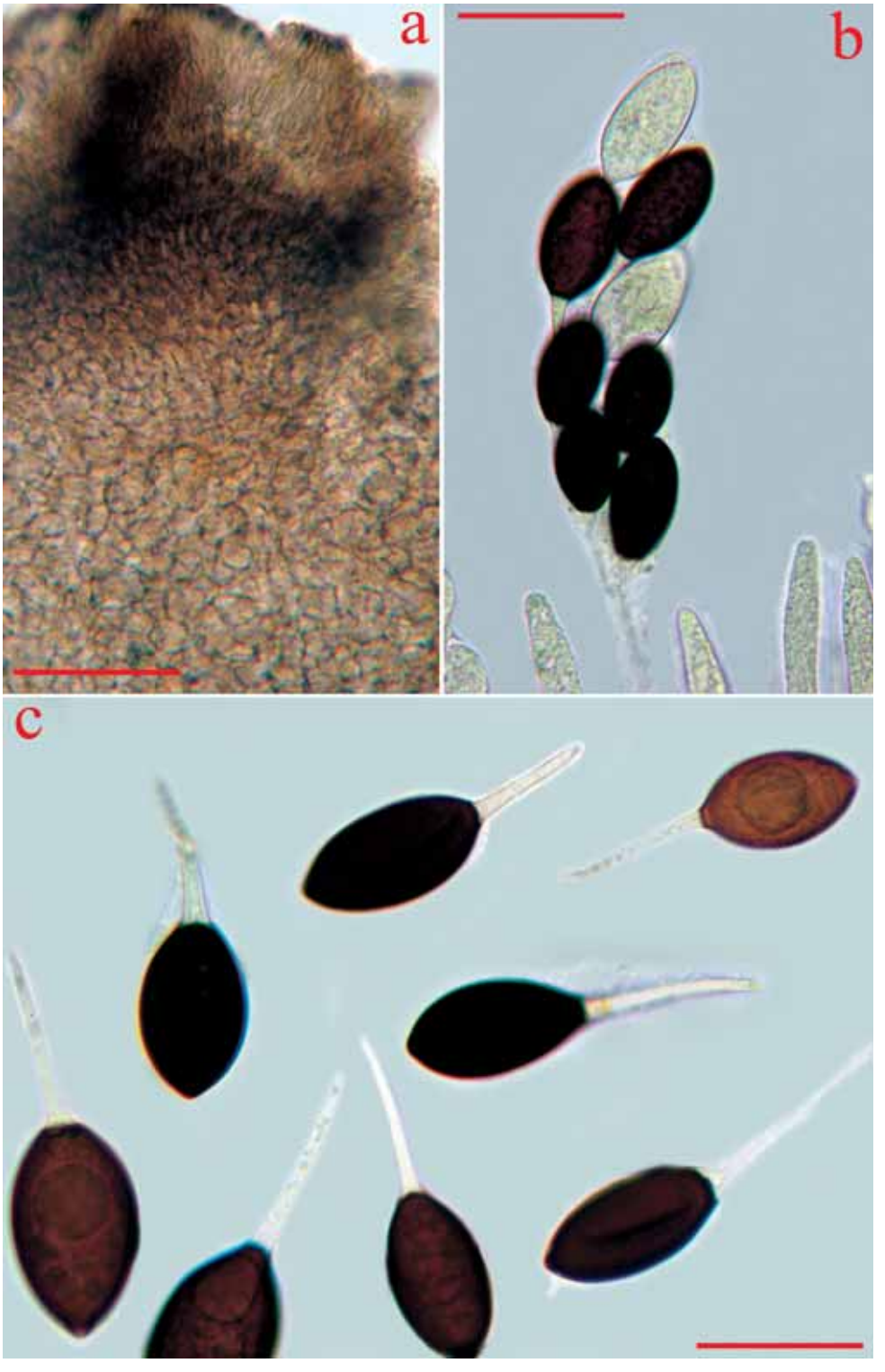

Fig. 31a-c. *Podospora globosa*. a = exoperidium at the neck and upper part of perithecium; b = asci in different stages; c = spores with some remnants of sheath. Scale bars: a-b = 50 µm; c = 35 µm.

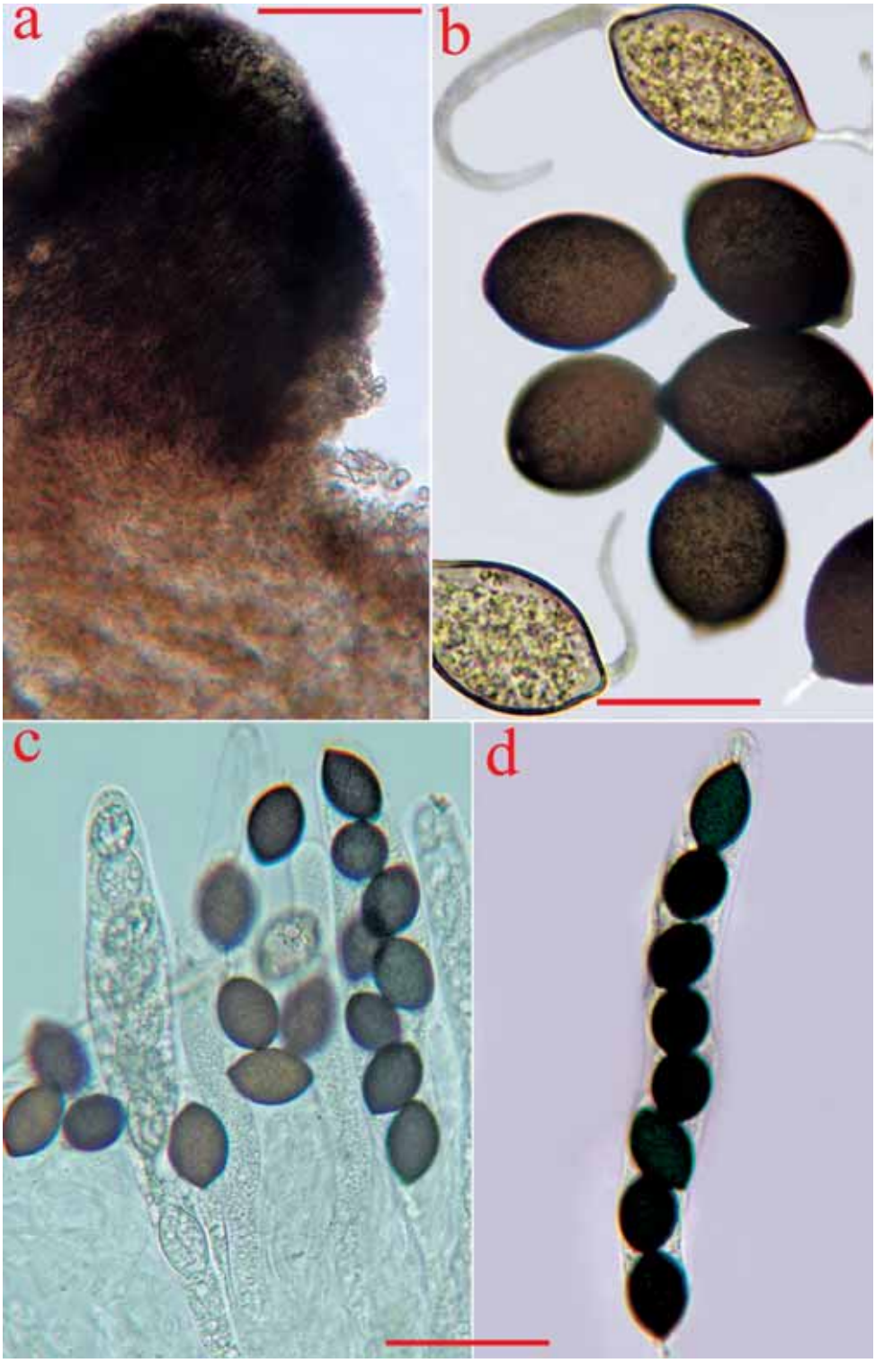

Fig. 32a-d. *Schizothecium glutinans*. a = perithecial neck with groups of swollen agglutinated hairs at its base (on the right); b = spores in different stages; c = 8-spored asci in different stages. Scale bars: a = 60 µm; b = 20 µm; c-d = 50 µm.

cauda surrounding the whole pedicel and the base of the spore head. Asci clavate. Perithecial neck glabrous. *Podospora intestinacea* (Fig.35)

85) Pedicel strongly variable in size (29-86 × 7.5-13.5 µm) and shape, cylindrical to obclaviform or pestle-shaped. Spore head 40.5-60 × 23-33.5 µm. Basal cauda apparently single. Peridium with scattered dark brown patches of carbonaceous (?) material. Perithecial neck glabrous, all over with dark papillae. *Podospora alexandri* (Figs.1-2)

85*) Pedicel much less variable, basically cylindrical. Lower caudae 2-4. Peridium lacking dark brown patches. 86

86) Spore head 50-67 × 25-38 µm. Pedicel 48-80 × 8-13 µm, slightly constricted or broader in the middle. Neck with rigid, non-agglutinated hairs. *Podospora austrohemisphaerica*

86*) Spore head and pedicel smaller, the latter evenly cylindrical. 87

87) Perithecial neck with rigid, sometimes agglutinated hairs. Gelatinous sheath surrounding both the spore head and pedicel. Spore head 39-46 × 24-25 µm. Pedicel 29-33 × 5-7 µm. *Podospora dactylina*

87*) Neck all over with short, dark papillae. Sheath surrounding the pedicel only. Spore head 40-46 × 22-25 µm. Pedicel 20-30 × 3-4 µm. *Podospora gwynne-vaughaniae*

88) Caudae multiple, variable in number. 89

88*) Caudae two: one upper, eccentric, near the apex of the spore head, one lower, central, at the pedicel tip. 94

89) Neck with short spinules. Asci with an apical ring. 90

89*) Neck glabrous or with a different vestiture. Apical ring not described or indistinct, rarely distinct. 91

90) Spore head 25-28 × 14-17 µm. Pedicel cylindrical to slightly obclavate, 50-75 × 6-7 µm. Upper caudae 2-5, lower 1-2. *Podospora deropodalis*

90*) Spore head 22-36 × 15.5-23 µm. Pedicel cylindrical, 21-27 × 6-10 µm. Upper caudae 3-5, lower caudae 2 or more at the pedicel apex, 1-3 at its base. *Podospora spinulosa*

91) Neck glabrous. 92

91*) Neck with short hairs. 93

92) Spores with 2 long upper, and 2 short lower caudae, head 24-30 × 18-20 µm, pedicel cylindrical, 12-18 × 3.5-4.5 µm. *Podospora euphratica*

92*) Spores usually with 4 caudae at the head apex and 4 at the pedicel apex, seemingly composed of two strands, head 34.5-39.5 × 18.5-21 µm (28-36 × 17-21, MIRZA & CAIN, 1969; 29-40 × 16-25, LUNDQVIST, 1972), pedicel cylindrical to slightly tapering, 18-39 × 5-6 µm (LUNDQVIST, 1972). Asci with a distinct apical ring. *Podospora communis* (fig.14)

93) Neck hairs pale grey. Spore head 29-35 × 16-23 µm. Pedicel 19-22 × 6-7 µm, subcylindrical. Caudae 1-5 near the spore head apex, 1-5 at one side of the spore head, 1-3 at one side of the pedicel, 1 at the pedicel apex. *Podospora multicaudiculata*

93*) Neck with hyaline hairs. Spore head 23-31 × 14-19 µm. Pedicel 26-31 × 8-9 µm, obclavate (constricted at its base). Upper caudae 4, lower cauda single. Asci with an indistinct apical ring. *Podospora hyalopilosa*

94) Perithecia (neck included) covered with short, straight, rigid, and isolated hairs, hyaline at their tips. Spore head with an apical germ pore. 95

94*) Perithecia and neck glabrous or with other kinds of hairs. Germ pore apical or subapical. 96

95) Hairs inflated at their tips. Spore head 23-32 × 12-16 µm. Pedicel 24-34 × 4-6 µm, cylindrical, slightly tapering. Asci clavate, rounded above, with a small, indistinct apical ring. Caudae transversely striate (WANG, 2000), 30-40 × 3-5 µm. Sometimes 2-3 short additional caudae present at the pedicel sides (RICHARDSON, 2001b). *Podospora inflatula*

95*) Hairs obtuse. Spore head 24-29 × 12-17 µm (LUNDQVIST, 1972). Pedicel 18-21 × 4-5 µm. Other features not described. *Podospora longispora*

96) Neck glabrous. Perithecia yellowish, more or less glabrous. Spore head slightly inequilateral, 39-44 × 22-27.5 µm (37-48 × 22-29, MIRZA & CAIN, 1969; 36-45 × 22-27, LUNDQVIST, 1972), with an eccentric germ pore. Pedicel 28-54 × 8.5-12 µm (LUNDQVIST, 1972), cylindrical to slightly obclavate, often septate and curved. Upper cauda 70-120 × 12-13 µm (LUNDQVIST, 1972), longitudinally furrowed, lower cauda slightly narrower, usually not furrowed, both swelling in water and becoming napiform at their tips. Asci clavate, tapering above, lacking an apical ring. *Podospora pyriformis* (Fig.43)

96*) Perithecia darker, olivaceous brown to dark brown, with hyphoid hairs. Spore head and pedicel smaller. 97

97) Perithecial neck glabrous. Spore head with an apical germ pore. 98

97*) Neck with rigid hairs. Spore head with an apical or subapical germ pore. 101

98) Asci cylindric-clavate, lacking an apical ring. Mature spores of two distinct morphologies: 1) typical and predominant morphology, i.e. a dark coloured, equilateral or slightly inequilateral spore head, 21-30 × 15-20 µm, and a cylindrical to obconical pedicel, 21 × 10 µm. Caudae transversely wrinkled, the upper with one channel; 2) hyaline spores becoming clavate and dictyosporous, 33-45 × 10-15 µm. *Podospora dimorpha*

98*) Spore morphology typical. Asci clavate. 99

99) Asci with an apical ring. Spore head 21.5-25.5 × 15-17.5 µm. Pedicel cylindrical, 25-29 × 4.5-5 µm, sometimes transversely septate. Upper cauda 35 × 5 µm. Lower cauda narrower. On donkey dung. *Podospora macropodalis*

99*) Asci lacking an apical ring. Spore head larger. 100

100) Spore head 25-30 × 18-20 µm. Pedicel cylindrical, tapering, 18-24 × 6-7.5 µm. Caudae loop-like, the upper hollow, 5-25 × 2.5-4.5 µm, the lower narrower. Isolated from marine sediments. *Podospora inquinata*

100*) Spore head 40-55 × 30-40 µm. Pedicel cylindrical to obconical, often curved, 26-38 × 12-16 µm. Caudae typical, lash-like, 4.5-5 µm wide. On camel dung. *Podospora pseudoinquinata*

101) Neck hairs short and isolated. Pedicel subcylindrical. 102

101*) Neck hairs up to 250 µm long and often agglutinated. Pedicel different in shape. 103

102) Neck hairs up to 20 µm long. Spore head 26-34 × 18-22 µm, with an apical germ pore. Pedicel cylindrical, slightly narrowed at the base, 19-25 × 5-7.5 µm. Upper cauda 50 × 6-7 µm, the lower much narrower and longer. Asci clavate or cylindric-clavate, with an indistinct apical ring. *Podospora mexicana*

102*) Neck hairs up to 80 µm long. Spore head 16-30 × 12-19 µm, with a slightly eccentric germ pore. Pedicel cylindric-clavate, 14-21 × 5-7.5 µm. Caudae 40 × 7 µm. Asci clavate, lacking an apical ring. *Podospora karachiensis*

103) Pedicel cylindrical, swollen in the middle and tip, often surrounded by a thin sheath (LUNDQVIST, 1973), 17-35 × 6-8 µm. Spore head 25-35 × 14-18 µm (MIRZA & CAIN, 1969; 26-35 × 14-19, LUNDQVIST, 1973), with a subapical germ pore (apical, LUNDQVIST, 1973). Caudae segmented, swelling and becoming "intestine-like", up to 180 × 35 µm. Asci broadly clavate to saccate, lacking an apical ring, rounded at the apex. *Podospora prethopodalis*

103*) Pedicel narrowly obconical. Caudae lacking such features. Asci clavate. 104

104) Spore head 33-38 × 18-20 µm (28-38 × 18-23, LUNDQVIST, 1972), slightly inequilateral, with an apical germ pore. Pedicel 18-25 × 7.5-9 µm. Caudae 70-160 × 6-15 µm, the upper proximally furrowed, the lower with a narrower furrow. Occasional presence of two indistinct gelatinous sheaths, the former covering the apical part of the spore head, the latter covering the end of the pedicel. Asci tapering above, lacking an apical ring. *Podospora dasypogon* (Fig.22-23)

104*) Spore head 21-27 × 11-16 µm (24-28 × 12-13, LUNDQVIST, 1972), equilateral, with a subapical germ pore. Pedicel 12-14 × 4 µm. Caudae 50-70 × 3-6 µm, not furrowed. Asci with a wide, rounded apex and an apical ring. *Podospora ellisiana*

105) (from 65*) Asci 16-spored, fusiform. Spore head 19-25 × 14-17 µm. Pedicel cylindrical,

capitate, 16-25 µm long. One lash-like, longitudinally channelled cauda at each spore end, 25-55 µm long, the upper subapical, the lower central. Perithecial neck tuberculate, glabrous. *Podospora ampullacea* (form)

105*) Asci more than 16-spored. 106

106) Asci 32-64-spored. Perithecial neck lacking rigid hairs. 107

106*) Asci more than 64-spored. Rigid hairs often present. 110

107) Asci 32 (64)-spored, clavate, short-stalked. Spore head 22-32 × 14-19 µm. Pedicel obclavate, 19-27 × 6 µm. A subapical, longitudinally striate, lash-like upper cauda, 15-25 × 3-5 µm, and a similar, central, lower cauda. *Podospora venezuelensis*

107*) Asci 64-spored, clavate to saccate. Caudae with a different structure. 108

108) Spore head 24-33 × 19-20 µm (LUNDQVIST, 1973). Pedicel pestle shaped, 12-18 × 5-6 µm. One upper and one lower cauda, each made up of two filaments. *Podospora adelura*

108*) Spore head smaller, with a different gelatinous equipment. 109

109) Asci with a sudden apical narrowing. Spore head 15-23 × 10-14 µm. Pedicel cylindrical to slightly obclavate, 11-17 × 3-4 µm. Upper caudae 2-3 in number, apical, solid, lash-like, distally fusing, 8-20 × 3-4 µm. Lower cauda single, central, similar to the upper ones, 50-70 × 0.7-1.5 µm. *Podospora multispora*

109*) Asci gently narrowing towards the apices. Spores head 21-24 × 13-17 µm. Pedicel cylindrical, capitate, 16-25 µm long. One lash-like, longitudinally channelled cauda at each spore end, 25-55 µm long, the upper subapical, the lower central. *Podospora ampullacea*

110) Asci 100- to 128-spored. 111

110*) Asci more than 128-spored. 114

111) Asci 100-128-spored, broadly clavate, long-stalked, lacking an apical ring. Spore head 21-23.5 × 13.5-14 µm (18-24 × 13-15, LUNDQVIST, 1972). Pedicel cylindrical or slightly obclavate, smooth, 11-18 × 6-7 µm (LUNDQVIST, 1972). Gelatinous equipment a thin sheath, surrounding both the spore head and the pedicel, lengthening at both ends into a single, solid, cylindrical or tapering cauda; the upper cauda bifid. Perithecial neck with abundant, rigid, not agglutinated hairs. *Podospora bifida* (Fig.13)

111*) Asci 128-spored. Gelatinous equipment of lash-like caudae only, one at each end, the upper subapical, the lower central. 112

112) Perithecial neck glabrous. Spore head 20-24 × 13-15 µm. Pedicel capitate. Caudae longitudinally channelled. Ascal apical ring not described. *Podospora ampullacea* (form)

112*) Perithecial neck with rigid hairs. Pedicel non-capitate, cylindrical to slightly obclavate. Caudae solid. Asci with a distinct apical ring. 113

113) Neck hairs usually non-agglutinated. Spore head 19-22.5 × 12-13 µm (17-19 × 10-12, MIRZA & CAIN, 1969; 18-21.5 × 11-13, LUNDQVIST, 1972). Pedicel 10-12.5 × 2.5-3.5 µm. Caudae 30-50 × 2-3 µm. Asci clavate. *Podospora setosa* (Figs.44-45)

113*) Neck hairs agglutinated. Spore head 20-25 × 13-15 µm (LUNDQVIST, 1972). Pedicel 10-12 × 3-4 µm. Caudae 30-120 × 1.5-2.5 µm. Asci broadly clavate. *Podospora platensis*

114) Asci 256-spored. Perithecial neck with rigid hairs. Caudae two, one at each spore end, apical, short, solid, fugacious. 115

114*) Asci more than 256-spored. Neck glabrous or hairy. Caudae sometimes with different features. 116

115) Neck hairs agglutinated, with even walls. Spore head 14-16 × 10.5-11 µm (14-16 × 8-11, MIRZA & CAIN, 1969; 14.5-17 × 9-11, LUNDQVIST, 1972), equilateral, with an apical germ pore. Pedicel obclavate, 7-9 × 2.5 µm. Asci usually saccate, short-stalked, lacking an apical ring. Widespread, usually on rabbit dung. *Podospora curvicolla* (Figs.16-17)

115*) Neck hairs non-agglutinated, with some constrictions. Spore head 11-14 × 6.5-8 µm (11-15 × 6.5-7.2 µm, LUNDQVIST, 1972), inequilateral, with an eccentric germ pore. Pedicel cylindrical,

9 × 3 µm. Asci clavate, long-stalked, with an apical ring. Usually in northern countries, on dung of wild animals. *Podospora araneosa*

116) Asci 512-spored. Spore head with an apical or subapical germ pore. 117
116*) Asci more than 512-spored. Germ pore apical. 120

117) Spore head 11-15 × 1.5-2 µm (VALLDOSERA & GUARRO, 1984), inequilateral, with an eccentric germ pore. *Podospora araneosa* (form)
117*) Spore head larger, equilateral. 118

118) Perithecial neck with rigid, non-agglutinated hairs, constricted at the septa. Spore head 19-21 × 12.3-14.2 µm (20-26 × 12-16 µm, LUNDQVIST, 1972), with an eccentric germ pore. Pedicel decidedly obclavate, granulose, 12-17 × 5-7 µm. Caudae: one at each end, filamentous, transversely septate, decidedly granulose, central, 30-60 × 5-11 µm. Asci broadly clavate, lacking an apical ring but with a thick apical membrane.
Podospora granulostriata (Fig.33)
118*) Perithecial neck glabrous or with agglutinated hairs, not constricted at the septa. Pedicel not granulose. Caudae differently structured, lash-like, smooth. 119

119) Perithecial neck with tufts of agglutinated hairs. Asci saccate, lacking an apical ring. Spore head 17-23 × 10-12 µm (MIRZA & CAIN, 1969), with an apical germ pore. Pedicel slightly obclavate, 8-10 × 3-4 µm. Caudae small, solid, one at each spore end.
Podospora longicollis
119*) Neck glabrous. Asci broadly clavate (apical ring not described). Spore head 24-26 × 16-17 µm, with an eccentric germ pore. Pedicel obclavate, 11-12 × 6-8 µm. Caudae 50 × 4 µm, the upper solid and eccentric, the lower hollow and central. *Podospora eminens*

120) Asci 1024-spored, broadly clavate. Spore head 15.5-17.5 × 9.5-11.5 µm, with a single, lash-like cauda (the upper one). Pedicel obclavate, 7.5-9.5 × 3.5 µm. Perithecial neck almost glabrous. *Podospora millespora*
120*) Asci 2048-spored, broadly fusiform. Spores with a few channelled caudae. Perithecial neck with short, sometimes agglutinated, rigid hairs. 121

121) Spore head 17-19 × 10-11 µm, slightly inequilateral, with an obclavate pedicel, 6-7.5 × 3.5-4.5 µm, and two lash-like, up to 120 µm long caudae, one at each end, the upper subapical. *Podospora praecox*
121*) Spore head 13-15 × 8-9 µm, equilateral, with a cylindric pedicel, 6.5-7.5 × 2-3 µm, and one or two upper, and one lower caudae, up to 70 µm long. *Podospora serotina*

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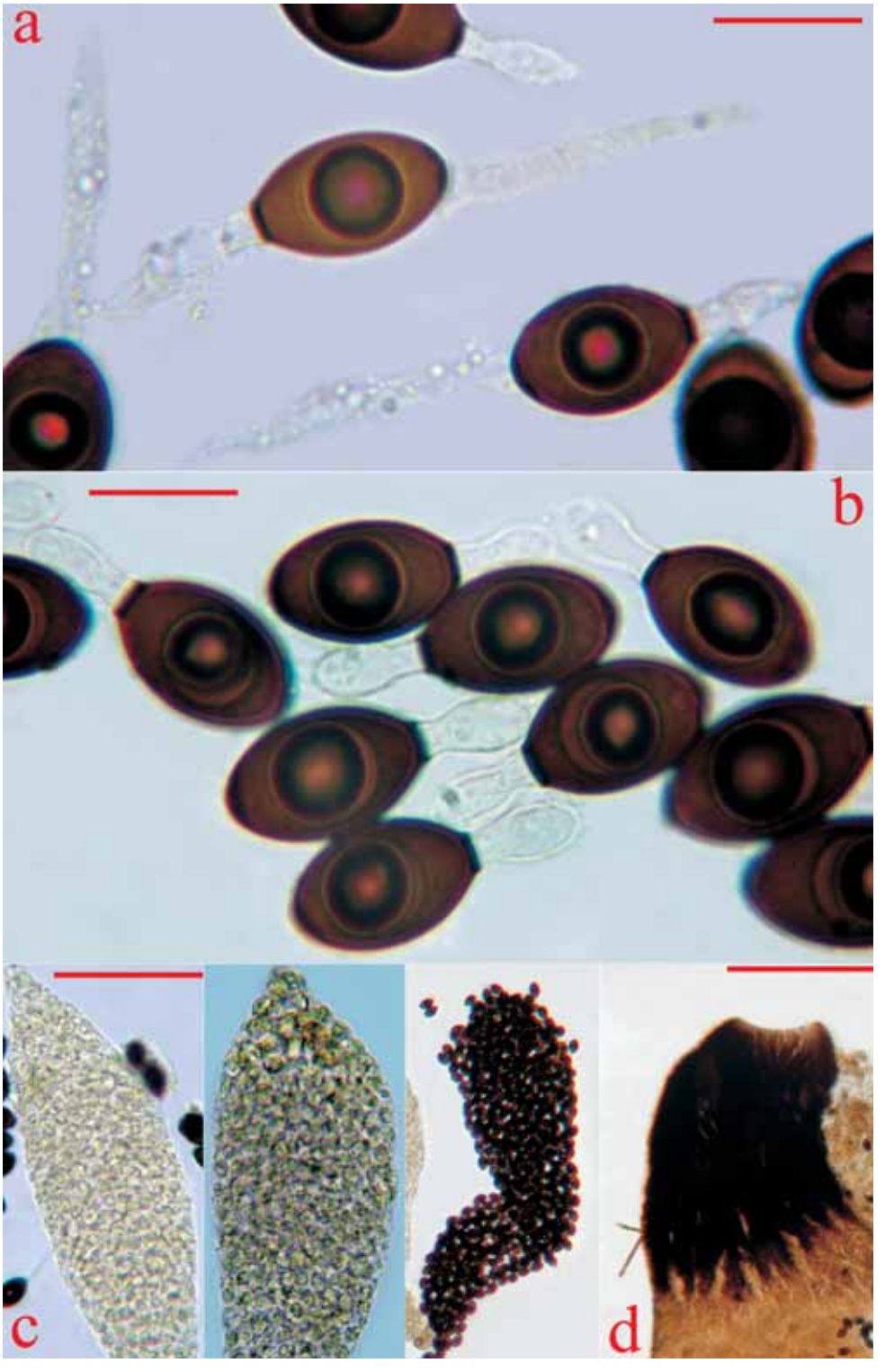

Fig. 33a-d. *Podospora granulostriata*. a-b = mature spores (a = with details of caudae); c = asci in different stages; d = perithecial neck with an atypical scarce number of rigid hairs (at its base, on the left). Scale bars: a-b = 15 µm; c = 100 µm; d = 150 µm.

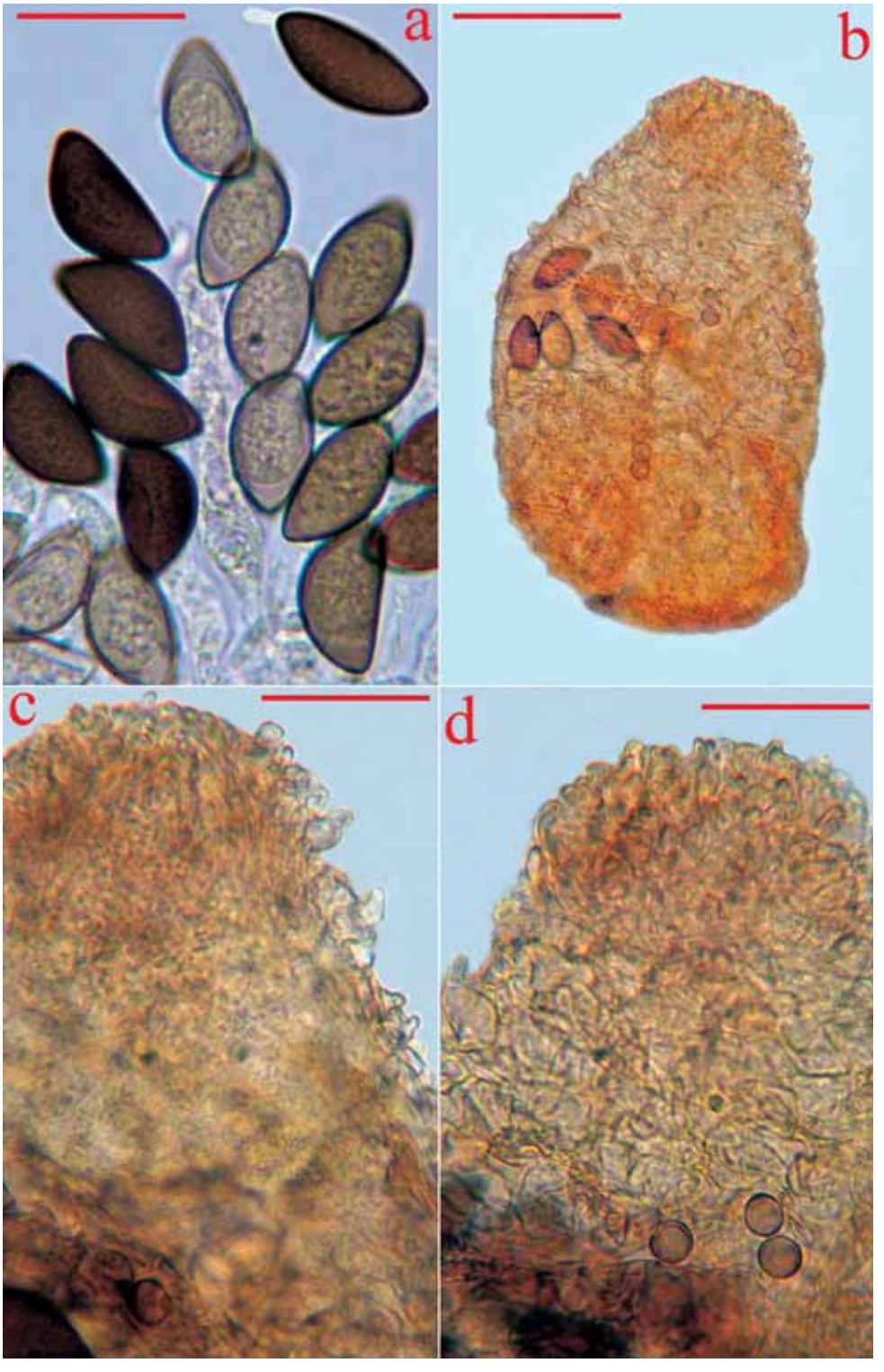

Fig. 34a-d. *Schizothecium inaequale*. a = free spore and 4-spored asci with spores in different stages; b = perithecium; c = swollen agglutinated hairs at the neck and upper part of perithecium; d = detail of exoperidium at the neck base. Scale bars: a,c-d = 20 µm; b = 50 µm.

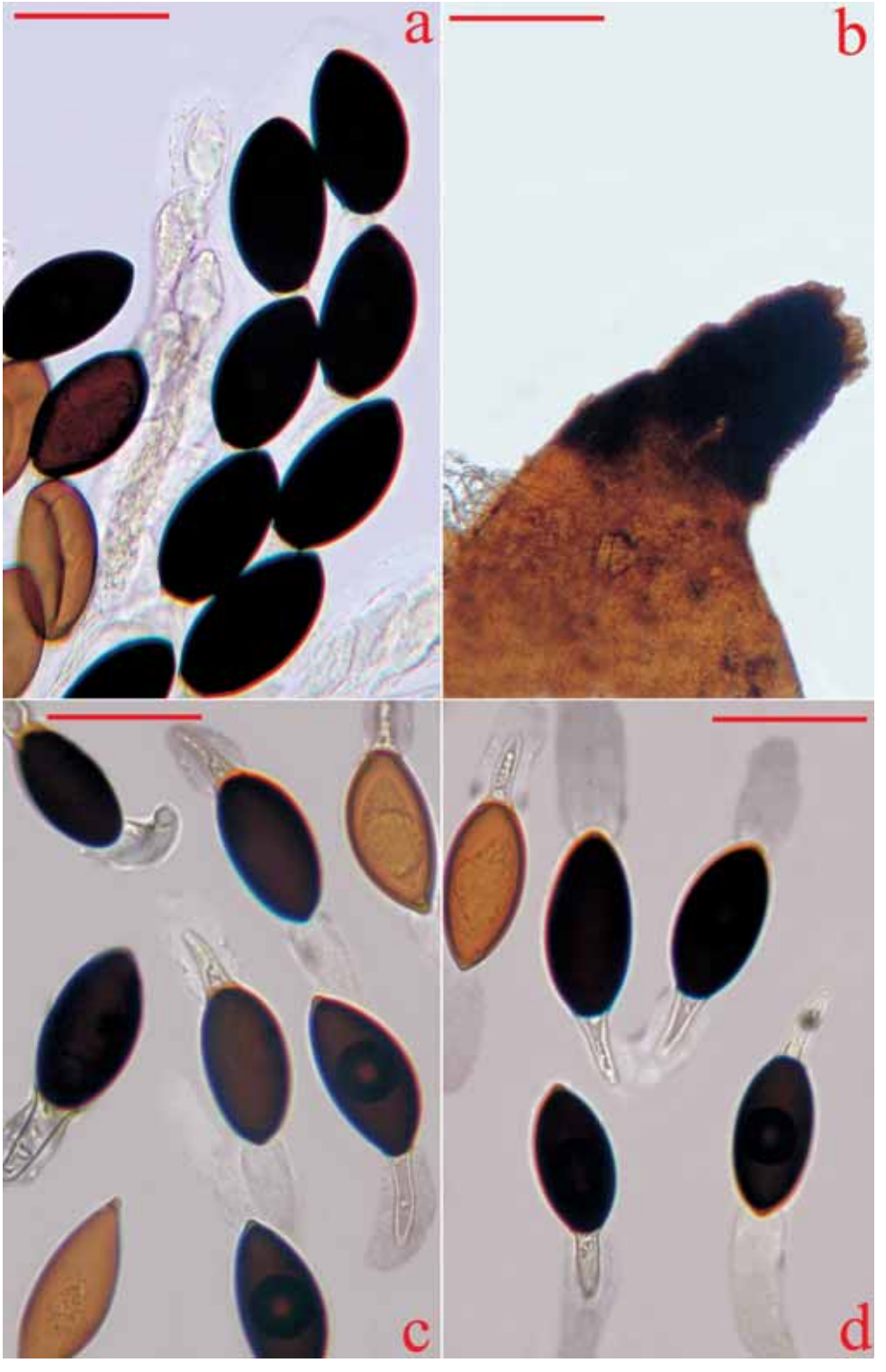

Fig. 35a-d. *Podospora intestinacea*. a = 8-spored asci in different stages; b = upper pertithecial part; c-d = spores. Scale bars: a,c-d = 50 µm; b = 150 µm.

Fig. 36. *Podospora longicaudata*. Spores. Scale bar = 40 µm.

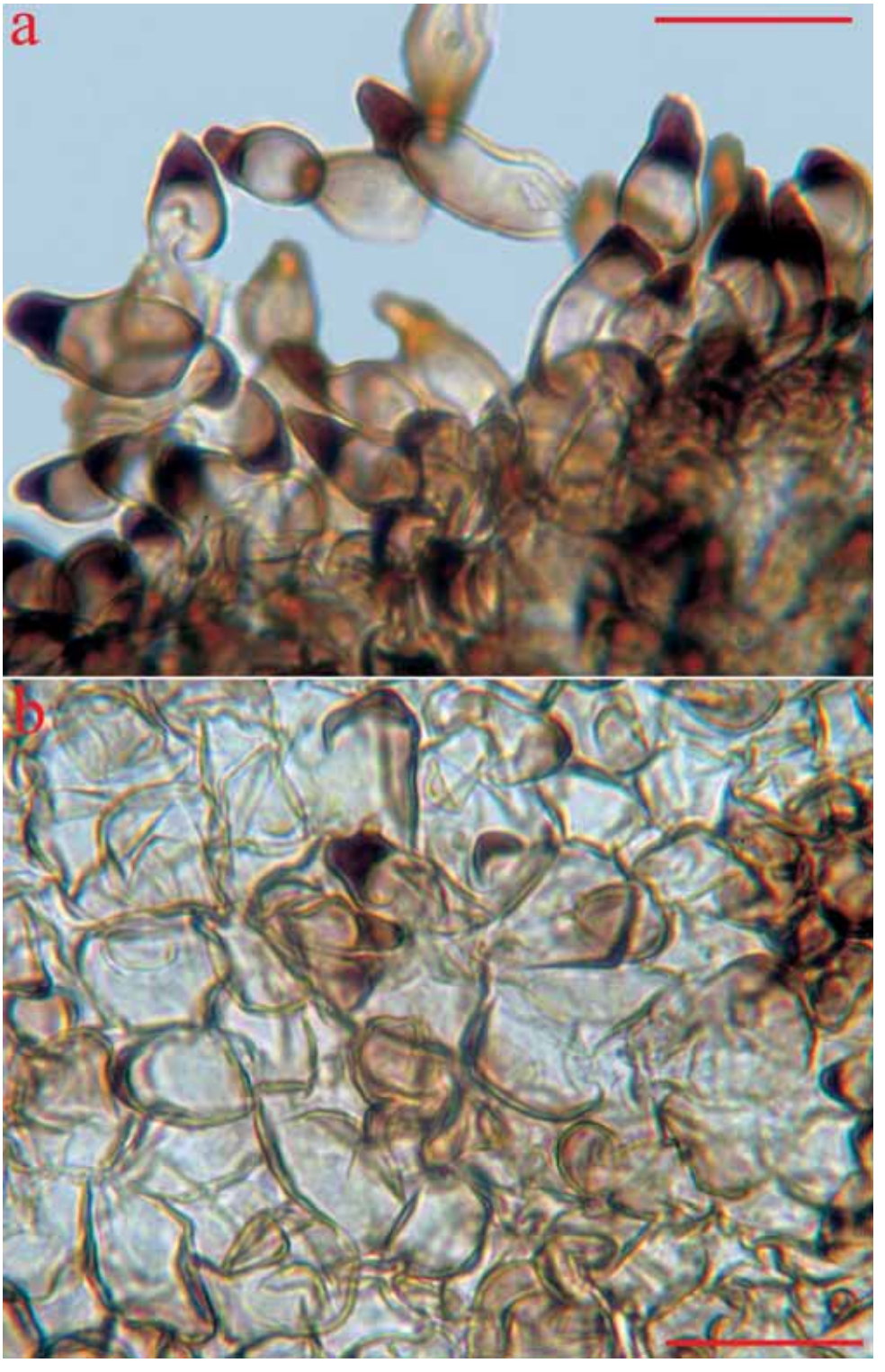

Fig. 37a-b. *Schizothecium miniglutinans*. a = swollen agglutinated hairs at the neck base; b = detail of exoperidium with some isolated swollen hairs. Scale bar: a-b = 15 µm.

Fig. 38a-c. *Schizothecium miniglutinans*. a = spores in different stages; b-c = asci with spores in different stages. Scale bars: a = 12 µm; b = 30 µm; c = 25 µm.

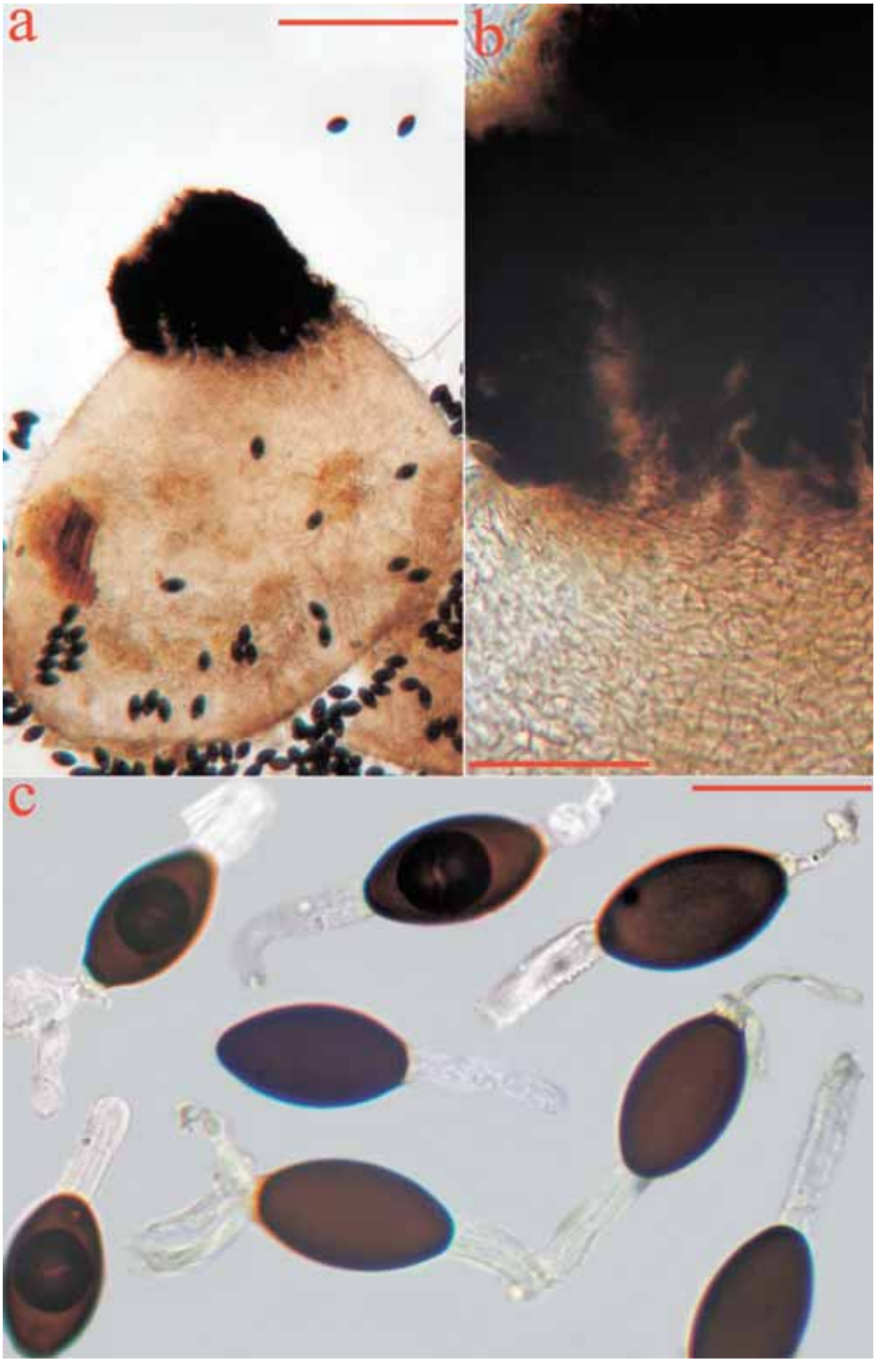

Fig. 39a-c. *Podospora myriaspora*. a = perithecium; b = exoperidium at the neck base; c = spores. Scale bars: a = 250 µm; b = 50 µm; c = 30 µm.

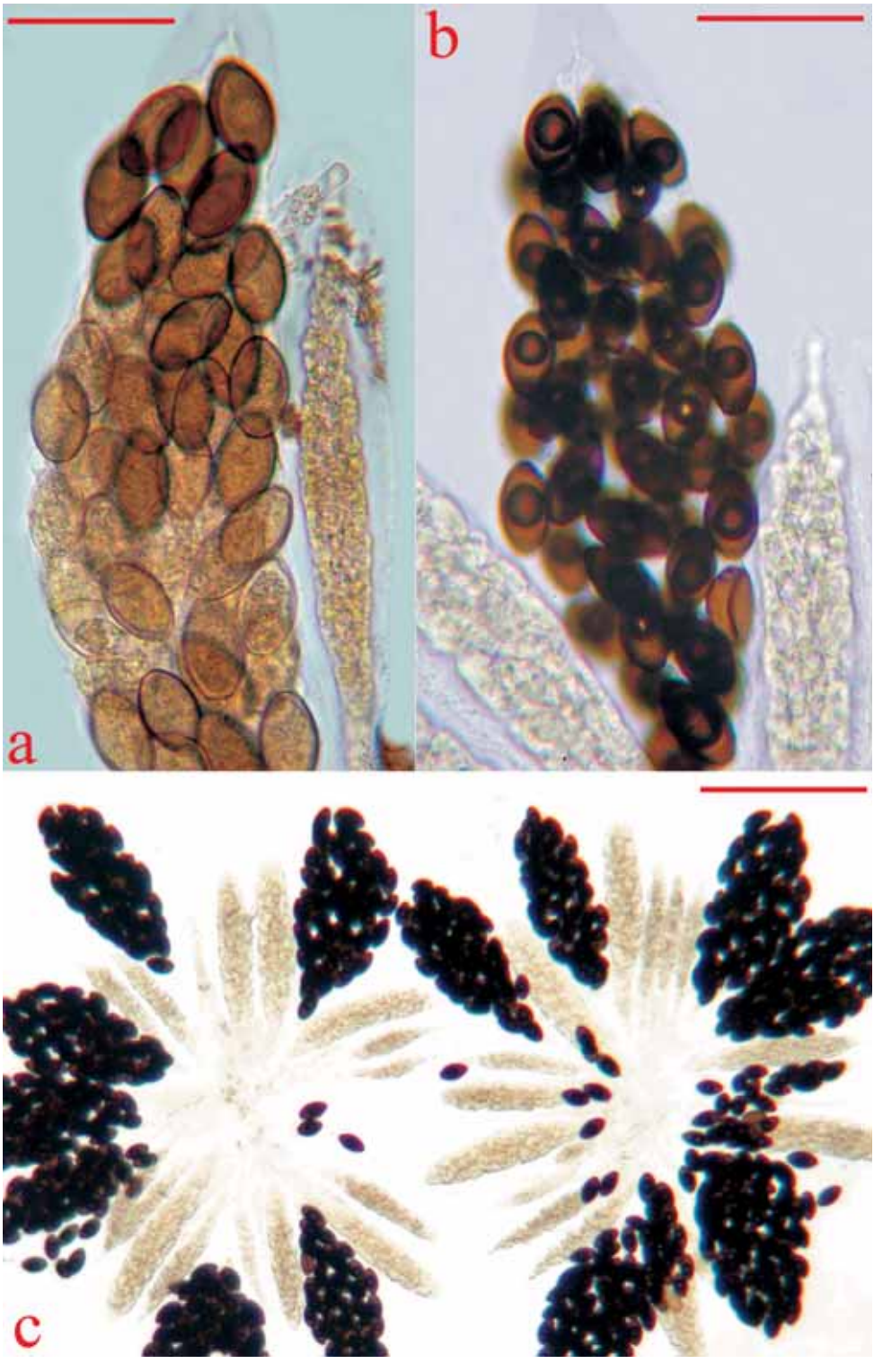

Fig. 40a-c. *Podospora myriaspora*. a-b = 64-spored asci with spores in different stages; c = centrum. Scale bars: a = 45 µm; b = 50 µm; c = 200 µm.

Fig. 41a-d. *Schizothecium pilosum*. a = rigid agglutinated hairs at the neck; b = detail of rigid hairs; c = immature 8-spored asci; d = spores. Scale bars: a = 50 µm; b = 40 µm; c = 25 µm; d = 20 µm.

Fig. 42a-f. *Podospora pleiospora*. a-d = spores; e = 32-spored ascus; f = detail of ascus. Scale bars: a = 30 µm; b,d,f = 15 µm; c,e = 35 µm.

Fig. 43a-d. *Podospora pyriformis*. a = perithecium; b = 8-spored immature asci; c = spores in different stages; d = immature spore inside the ascus. Scale bars: a = 250 µm; b = 60 µm; c-d = 40 µm.

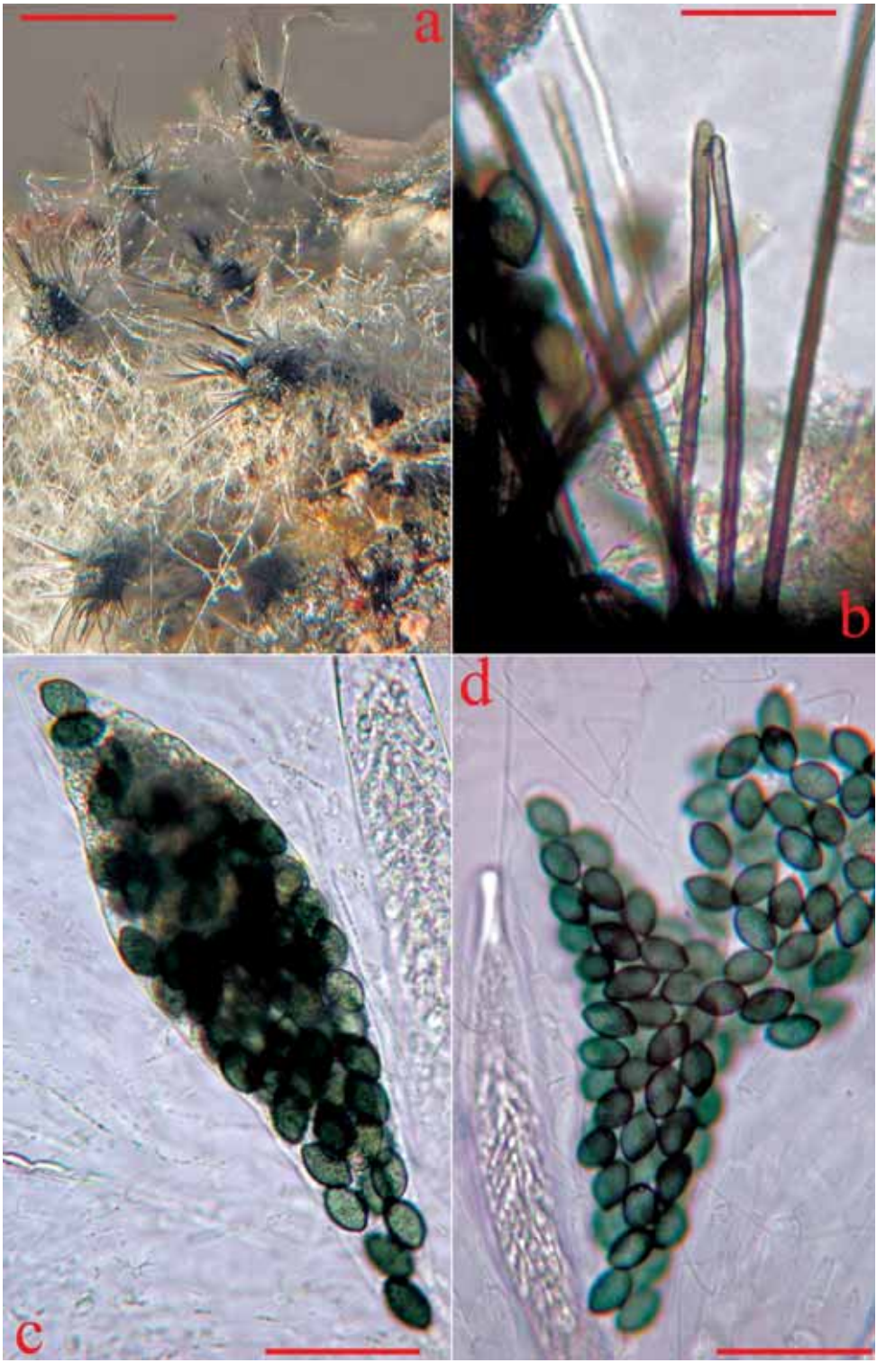

Fig. 44a-d. *Podospora setosa*. a = emerging perithecia with hairy necks; b = rigid hairs at the neck; c-d = poly-spored asci with spores in different stages. Scale bars: a = 350 µm; b = 35 µm; c-d = 50 µm.

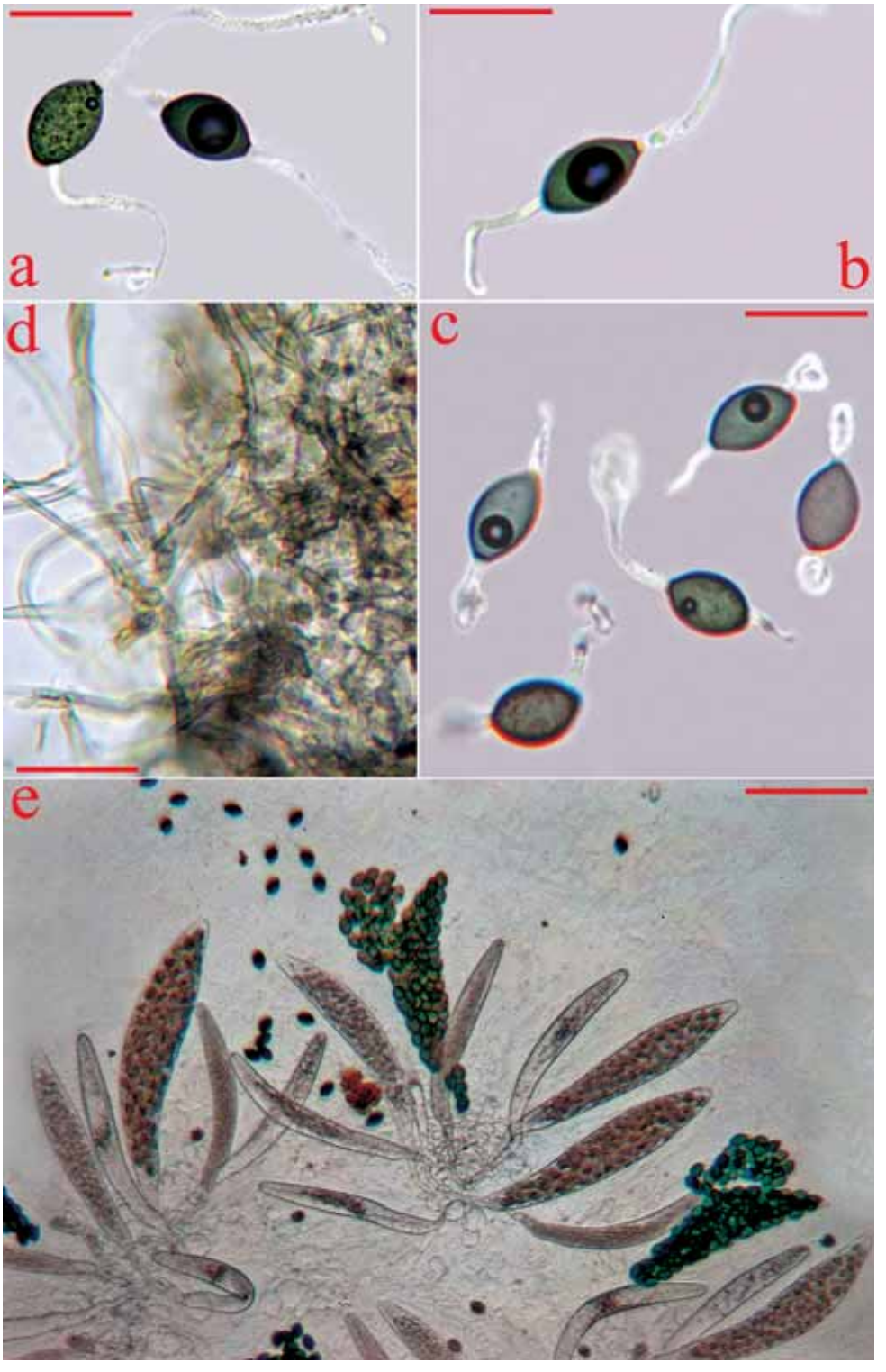

Fig. 45a-e. *Podospora setosa*. a-c = spores; d = exoperidium with hyphoid hairs; e = centrum. Scale bars: a-c = 25 µm; d = 20 µm; e = 150 µm.

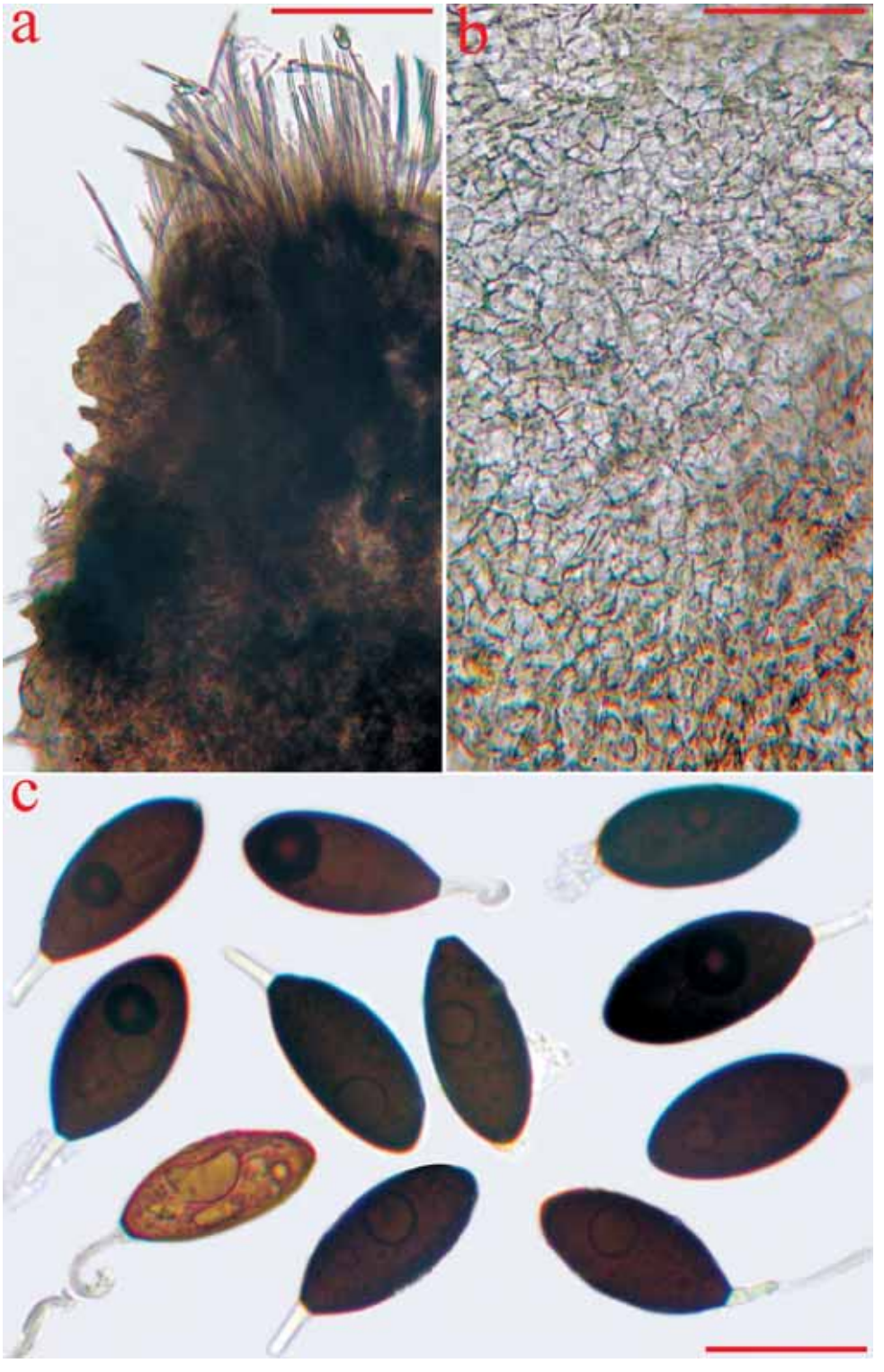

Fig. 46a-c. *Schizothecium simile*. a = upper portion of perithecium with rigid hairs at the neck and a group of swollen agglutinated hairs at the neck base; b = detail of exoperidium; c = spores with scarce remnants of caudae and sheath. Scale bars: a-b = 50 µm; c = 25 µm.

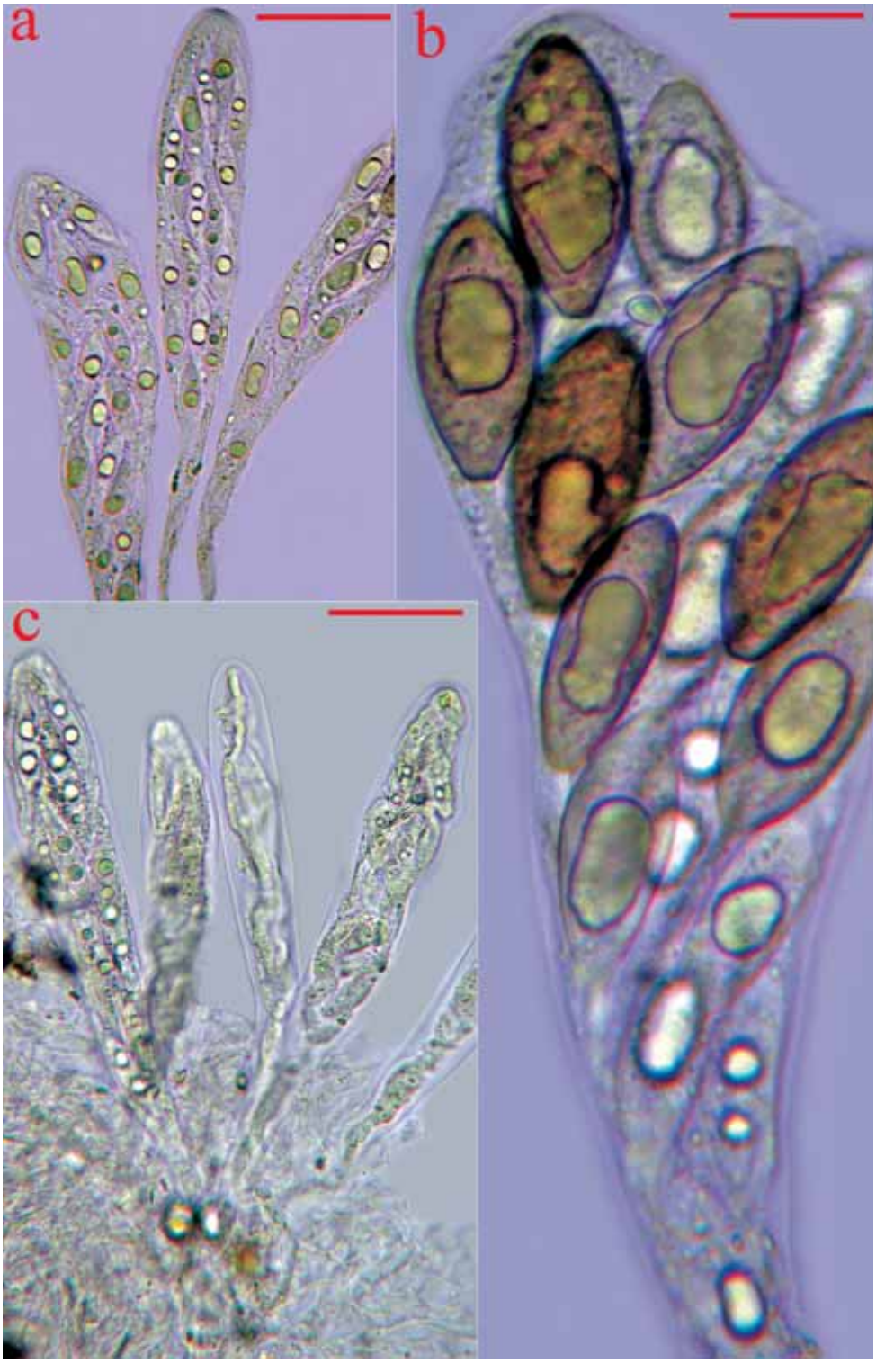

Fig. 47a-c. *Schizothecium simile*. a-c = 16-spored asci with immature spores in different stages. Scale bars: a,c = 50 µm; b = 10 µm.

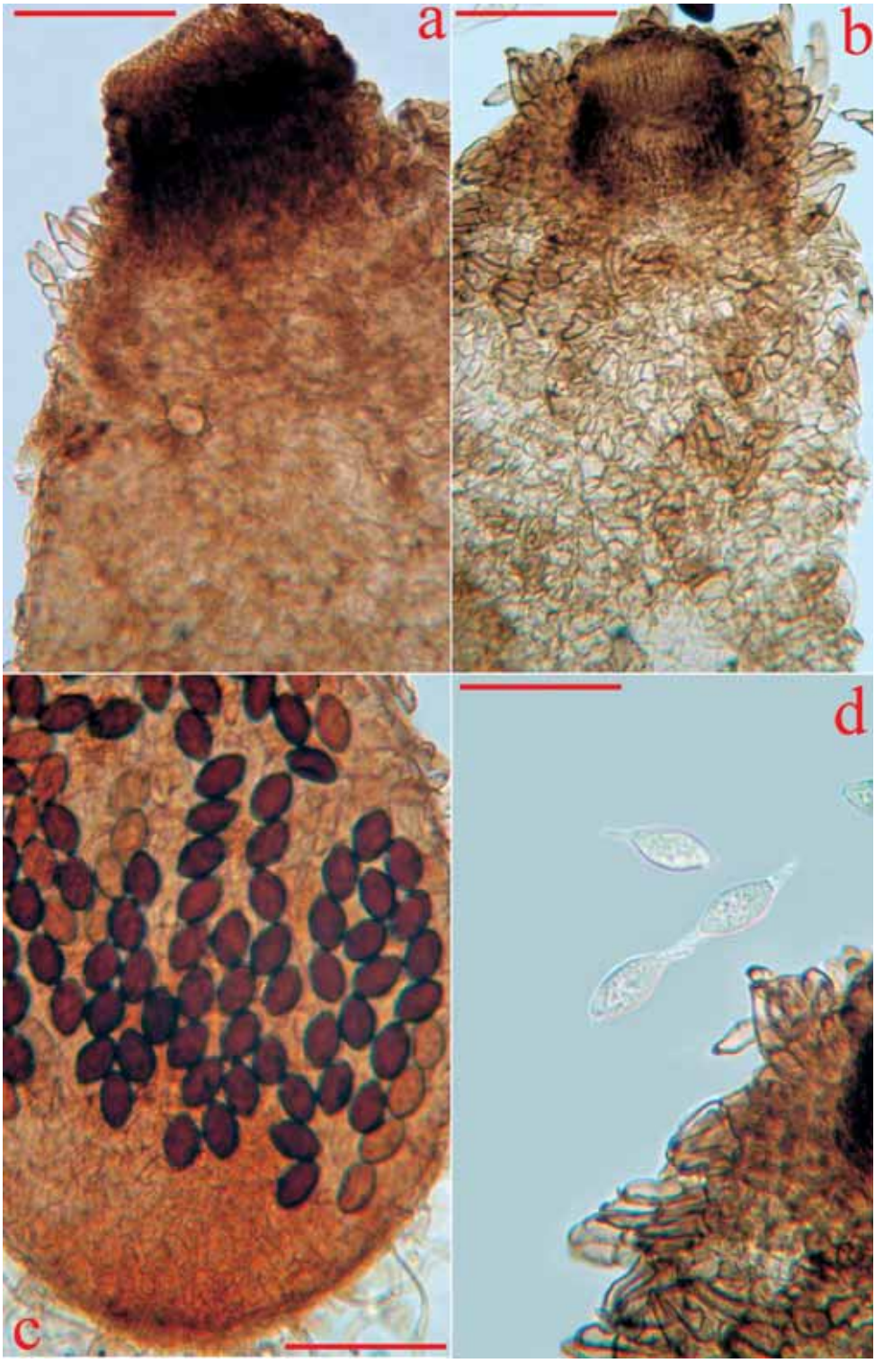

Fig. 48a-d. *Schizothecium tetrasporum*. a-b = upper portion of perithecium with swollen agglutinated hairs at the neck base; c = semitransparent perithecial base, through which free spores are observable; d = swollen agglutinated hairs at the neck base. Scale bars: a-c = 1000 µm; d = 40 µm.

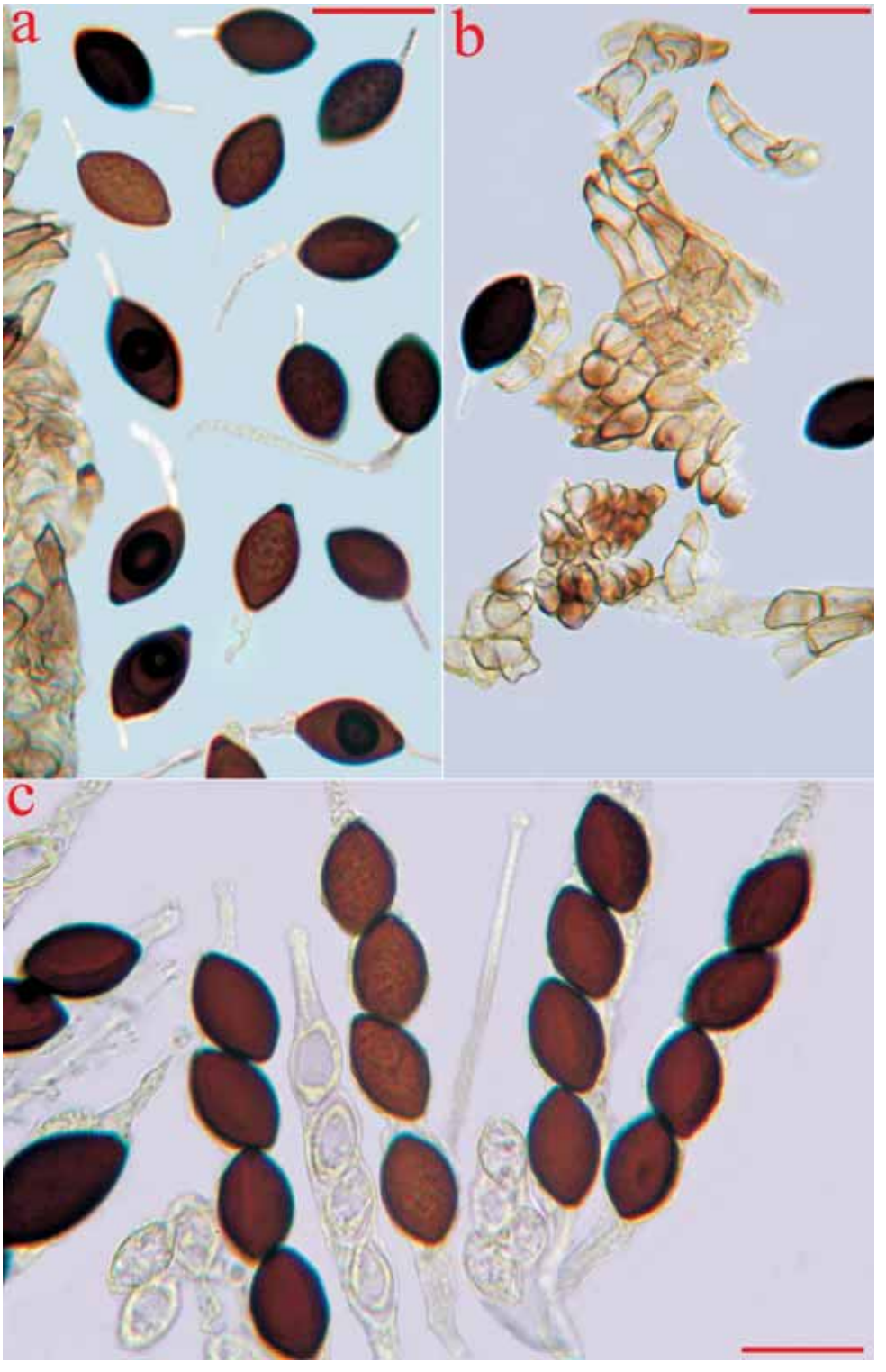

Fig. 49a-c. *Schizothecium tetrasporum*. a = spores (swollen agglutinated hairs on the left); b = detail of swollen agglutinated hairs; c = 4-spored asci with spores in different stages. Scale bars: a-b = 22 µm; c = 20 µm.

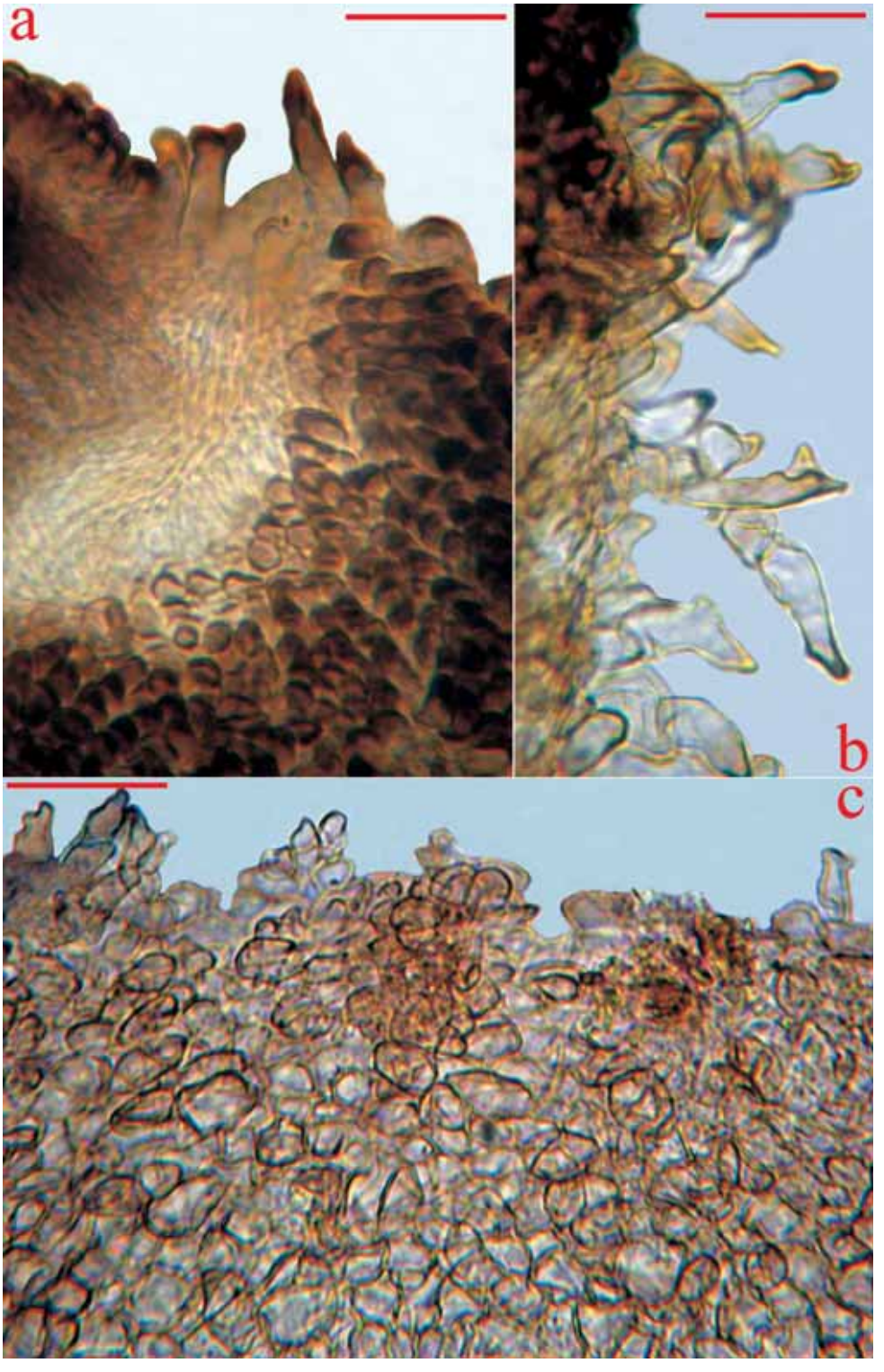

Fig. 50a-c. *Schizothecium vesticola*. a = ostiole bounded by dark tuberculate cells and some swollen hairs; b = swollen hairs between the neck base and upper peridial portion; c = detail of exoperidiumwith some swolen hairs. Scale bars: a = 35 µm; b = 25 µm; c = 40 µm.

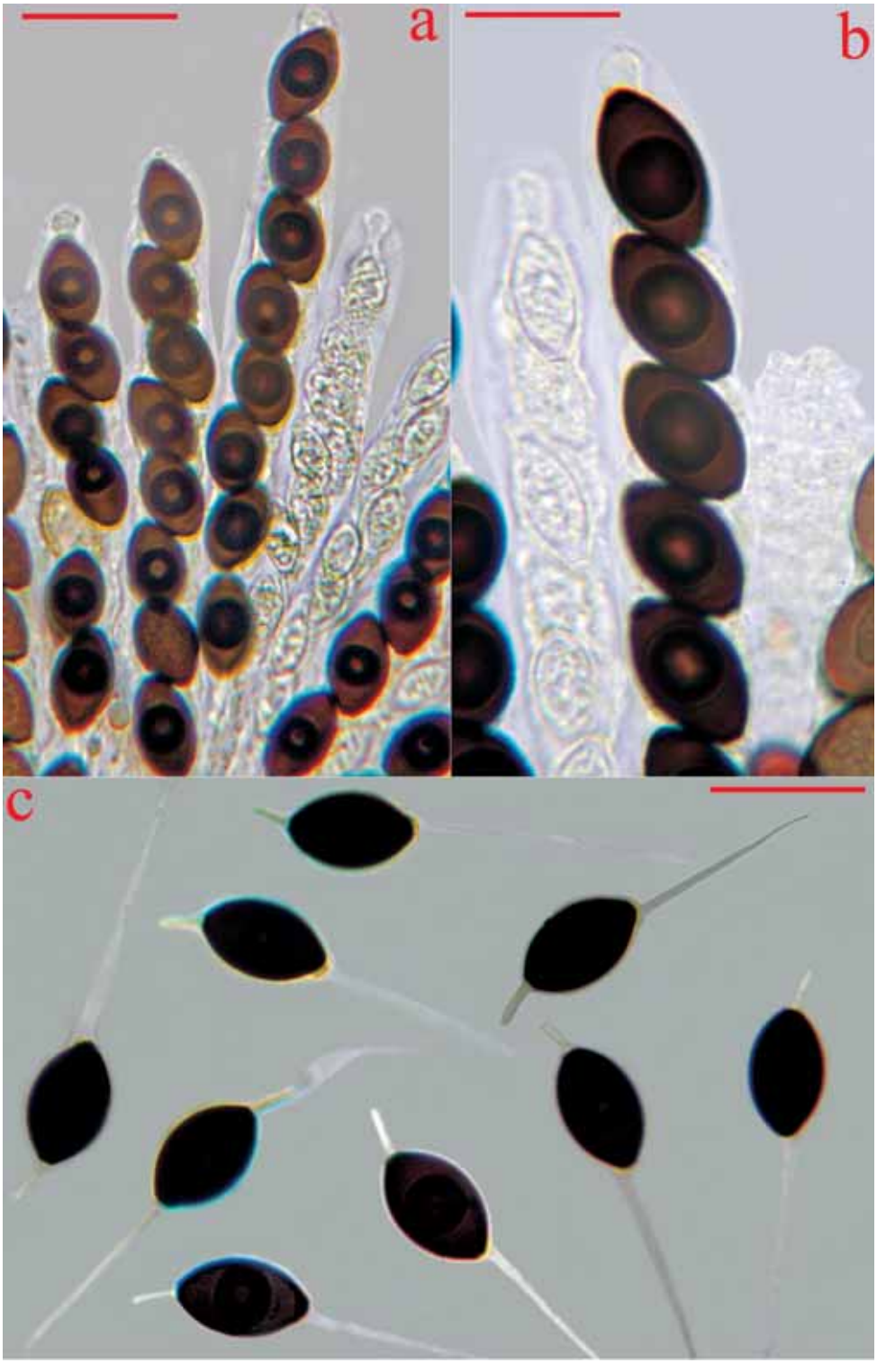

Fig. 51a-c. *Schizothecium vesticola*. a = 8-spored asci with uniseriate spores in different stages; b = detail of 8-spored asci; c = spores. Scale bars: a = 25 µm; b = 20 µm; c = 23 µm.

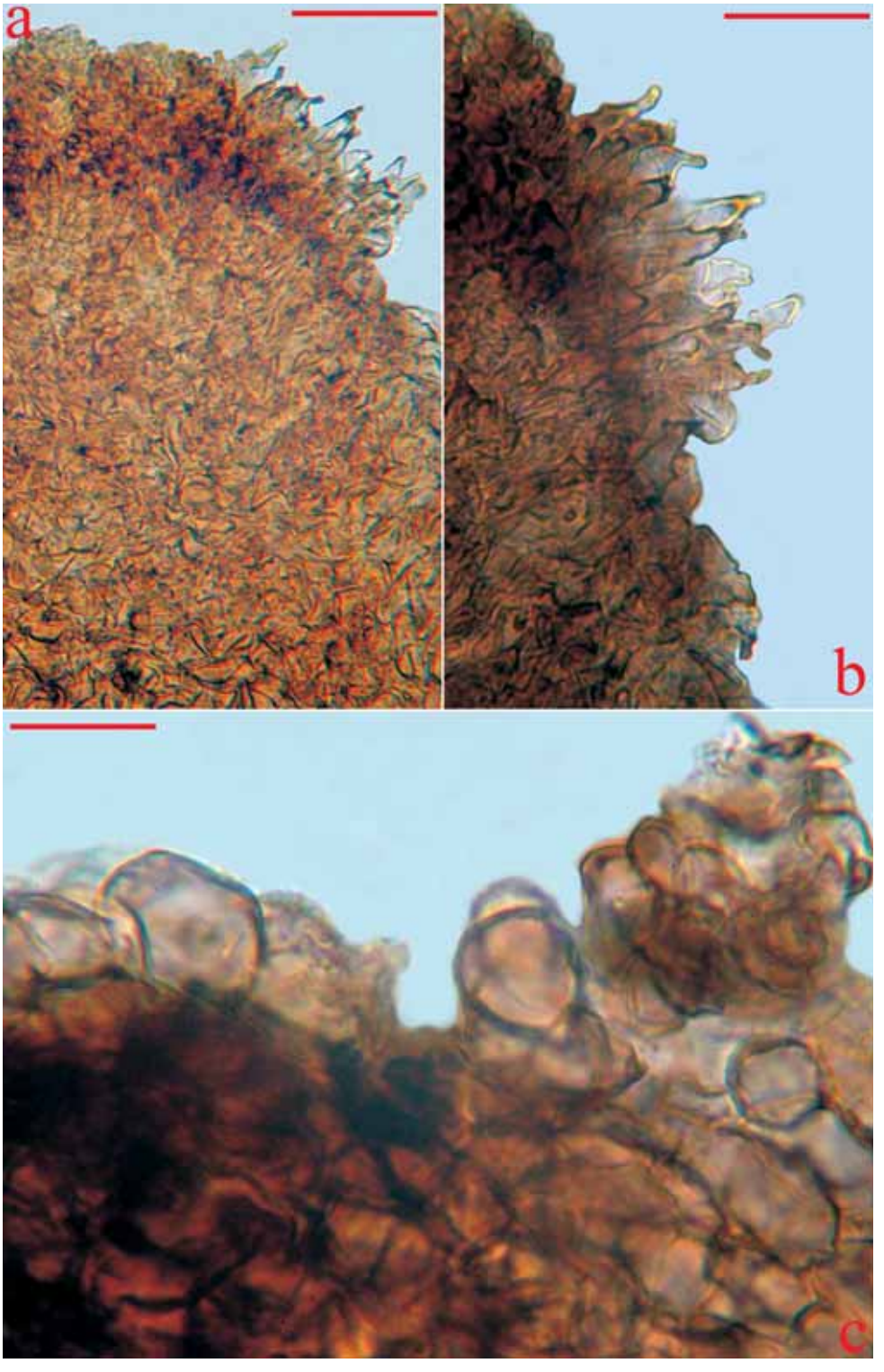

Fig. 52a-c. *Schizothecium vratislaviense*. a = upper perithecial portion with swollen agglutinated hairs at the neck base; b = detail of exoperidium and swollen agglutinated hairs; c = cells of exoperidium (*textura globulosa*). Scale bars: a = 60 µm; b = 30 µm; c = 10 µm.

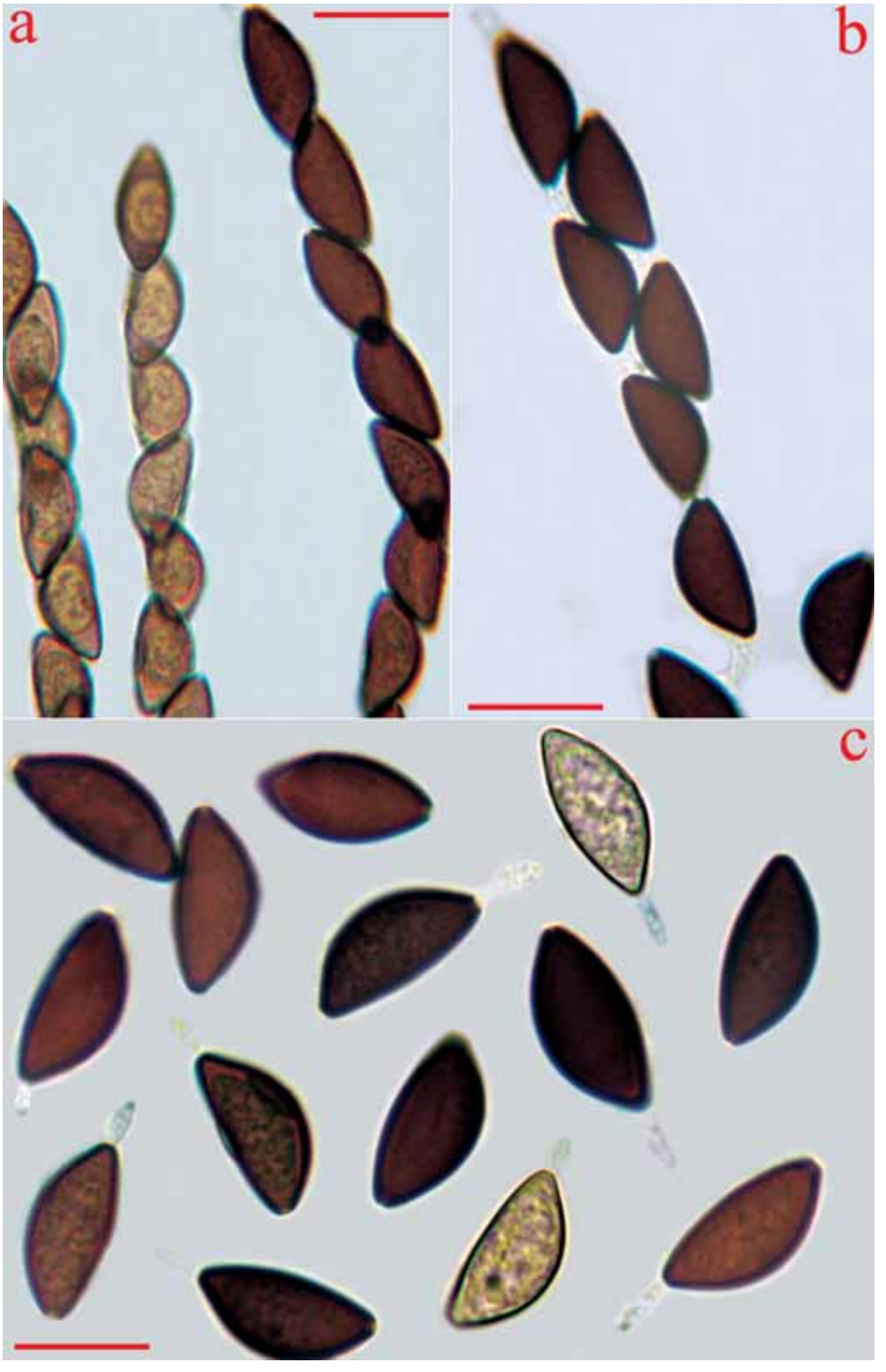

Fig. 53a-c. *Schizothecium vratislaviense*. a-b = spores inside the asci, having the flattened sides turned away from each other; c = spores. Scale bars: a-b = 13 µm; c = 10 µm.

FUNGI FIMICOLI ITALICI

GUIDA AL RICONOSCIMENTO DEI BASIDIOMICETI E DEGLI ASCOMICETI CHE VIVONO SU MATERIA FECALE

A guide to the recognition of *Basidiomycetes* and *Ascomycetes* leaving on fecal matter

FRANCESCO DOVERI

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