

THE GENUS *SCHIFFNERULA* AND ITS SYNANAMORPHS

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Abstract

The pleomorphy of the genus *Schiffnerula* is established well with its synanamorphs, namely, *Digitosarcinella*, *Mitteriella*, *Questieriella* and *Sarcinella*. The genus *Schiffnerula* represents wide range of hosts belonging to 57 families. All the fungal genera and species are arranged under their respective and alphabetically arranged host families. *Schiffnerula tectonae* (Thite & Patil) comb. nov. is effected here based on *Clypeolella tectonae* Thite & Patil. List of doubtful species is provided at the end.

Keywords

Fungi, Schiffnerula, synanamorphs, Questieriella, Mitteriella, Digitosarcinella, Sarcinella, anamorph, checklist, India

Introduction

Schiffnerulaceous fungi flourish well in the tropics and have extended their distribution to subtropical to temperate regions of the world. The connection between teleomorphs and synanamorphs is well established. The genus *Schiffnerula* includes four synanamorphs: *Questieriella*, *Mitteriella*, *Digitosarcinella* and *Sarcinella*.

Saccardo (1875) published an account of *Apiosporium pulchrum* and made a new combination of it as *Dimerosporium pulchrum* (Sacc.) Sacc. Saccardo (1877) redescribed this fungus with two types of conidia, namely, sarciniform conidia and falcate conidia. The genus *Sarcinella* was proposed to the fungus having sarciniform conidia. Arnaud (1918) proposed the generic name, *Questieriella* to the fungus having falcate conidia. Later, Hughes (1983) validated the name and assigned *Questieriella pulchra* Hughes as its type. Sydow & Mitter (1933) proposed a genus *Mitteriella*, with its type *Mitteriella ziziphina*, for the fungus having straight dark brown conidia with four septa and with a large central cell. Hughes (1984a,b) proposed

Digitosarcinella, *D. caseariae* for the fungus having cheiroid conidia with 4-5 closely appressed arms.

The two genera, *Clypeolella* and *Schiffnerula* cannot be demarcated and hence the former genus was merged with the latter (Hughes, 1983). The anamorphs, *Digitosarcinella*, *Mitteriella*, *Questieriella* and *Sarcinella* are the synanamorphs of the genus *Schiffnerula*. Hughes (1987) gave an excellent review of the genus *Schiffnerula* and its synanamorphs. However, the present work provides an up-to-date check-list of the genus *Schiffnerula* and its anamorphs with their host specificity.

The genus *Schiffnerula*

Schiffnerula Höhnel, Sber, Akad. Wiss. Wien, math. Nat.kl., I, 118: 867, 1909. Arx & Mueller, Stud. Mycol. 9: 48, 1975; Hughes, Can. J. Bot. 61: 1763, 1983.

= *Clypeolella* Höhnel, Sber. Akad. Wiss. Wien., math.-nat.kl. I, 119: 403, 1910.

= *Phaeoschiffnerula* Theiss., Broteria 12: 21, 1917.

= *Questieria* Arn., Les Asterinees 1: 186, 1918.

= *Diathrypton* Sydow, Philippine J. Sci. 21: 137, 1922.

= *Coniosporiella* Bat., Atas Inst. Univ. Recife 3: 113, 1966.

Type

S. mirabilis Höhnel.

Diagnostic features

Hyphe superficial, colonies foliicolous, brown, appressoriate, appressoria unicellular. Ascomata arise from the short lateral branches, initially with radiating cells but the cells dissolve when the ascomata start resuming globose appearance. Asci few, bitunicate, broadly ellipsoid to globose, sessile, octosporous, exposed after deliquescing the ascomatal wall; ascospores brown, 1-septate, constricted at the septum.

Form genus *Digitosarcinella*

Digitosarcinella Hughes, Can. J. Bot. 62: 2208, 1984.

Type

D. caseariae Hughes

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Diagnostic features

Colonies foliicolous. Hyphae superficial, brown to dark brown, branched, appressoriate, appressoria sessile, lateral, unicellular. Conidiogenous cells lateral, sessile, monoblastic. Conidia cheiroid, with 4-5 closely appressed arms, up to 7-septate, constricted at the septa.

Form genus *Mitteriella*

Mitteriella Sydow, Ann. Mycol. 31: 95, 1933; Ellis, Dematiaceae Hyphomycetes, p. 228, 1977.

Type

M. ziziphina Sydow

Diagnostic features

Colonies black. Hyphae superficial, brown, branched, septate, appressoriate. Appressoria lateral, unicellular. Conidiophores macronematous, mononematous, short, simple. Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate. Conidia solitary, simple, ellipsoidal to limoniform, black, 0-4-septate.

Form genus *Questieriella*

Questieriella Arn. ex Hughes, Can. J. Bot. 61: 1729, 1983.

Type

Q. pulchra Hughes.

Diagnostic features

Colonies black, hyphae superficial, brown, branched, septate, appressoriate. Appressoria lateral, unicellular. Conidiophores micronematous, mononematous, lateral, 0-2-septate. Conidiogenous cells monoblastic to polyblastic, integrated, terminal, lateral or incorporated in the hyphae. Conidia blastic, terminal, solitary, narrowly ellipsoidal to obovoidal, curved, falcate, sigmoid, truncate at the base, 3-septate.

Form genus *Sarcinella*

Sarcinella Sacc., Michelia 2: 31, 1880; Ellis, Dematiaceae Hyphomycetes, p. 49, 1977.

Type

S. heterospora Sacc.

Diagnostic features

Colonies black. Hyphae superficial, branched, septate, appressoriate. Appressoria lateral, unicellular. Conidiophores macronematous, semi-macronematous, simple to branched. Conidiogenous cells monoblastic, integrated, terminal, intercalary, determinate. Conidia solitary, acrogenous or acropleurogenous, subspherical, sarciniform, dark brown to reddish brown, smooth, constricted at the septa.

Acanthaceae

Schiffnerula whitfieldiae Hansf., Proc. Linn. Soc. London 1944-45: 162, 1946.

On leaves of *Whitfieldia* sp., Uganda.

Anacardiaceae

Schiffnerula rhois Hansf., Proc. Linn. Soc. London 1944-45: 161, 1946.

On leaves of *Rhus villosa*, Uganda.

Sarcinella odinae Sahni, Mycopathol. Mycol. Appl. 23: 328-338, 1964.

On leaves of *Odina wodier*, India.

Sarcinella copallina (Ellis & Everh.) Hughes, Can. J. Bot. 61: 1746, 1983.

= *Stemphylium copallinum* Ellis & Everh., Mycol. 8: 73, 1902.

On leaves of *Rhus copallina*, USA.

Anisophylleaceae

Schiffnerula anisophylleae (H. Sydow) Hughes, Pleomorphy in some hyphopodiate fungi, p. 133, 1987.

= *Clypeolella anisophylleae* H. Sydow, Ann. Mycol. 36: 190, 1938.

On leaves of *Anisophyllea laurina*, Sierra Leone.

Annonaceae

Schiffnerula trachysperma Petrak, Ann. Mycol. 29: 253, 1931.

On leaves of *Polyalthia* sp., Philippines.

Apocynaceae

Questieriella prestoniae (P. Henn.) Hughes, Can. J. Bot. 61: 1750, 1983.

= *Heminthosporium prestoniae* P. Henn., Hedwigia 43: 394, 1904.

On leaves of *Prestonia* sp., Peru.

Sarcinella oreophila H. Sydow, Ann. Mycol. 35: 242, 1937.

On leaves of *Carissa spinarum*, India.

Aquifoliaceae

Clypeolella mate (Speg.) Theiss., Centralbl. Bakt. 34: 232, 1912.

On leaves of *Ilex* sp., Uganda.

Asclepiadaceae

Schiffnerula doidgeae Hansf., Proc. Linn. Soc. London 1944-45: 161, 1946.

On leaves of *Cynanchum ellipticum*, South Africa.

Sarcinella cryptostegiae N. Srivastava, S. Chandra & C. Gupta, Vegetos 3: 74, 1990.

On leaves of *Cryptostegia grandiflora*, India.

Asteraceae

Schiffnerula barnadesiae (Pat.) Petrak, Sydowia 9: 484, 1955.

= *Dimerosporium barnadesiae* Pat. in Pat. & Lagerheim, Bull. Trimest. Soc. Mycol. France 9: 148, 1893 (*barnadesiae*).

On leaves of *Barnadesia spinosa*, Ecuador.

Schiffnerula compositarium (Theiss.) Petrak, Ann. Mycol. 26: 398, 1928.

= *Phaeoschiffnerula compositarium* Theiss. Broteria 12: 21, 1914.

On leaves of *Verbesina myriocephala*, *V. turbacensis*, *V.*

caracasana, *Mikania capensis*, Costa Rica and South Africa.

Schiffnerula concinna Petrak, Sydowia 4: 538, 1950.
On leaves of *Gynoxys* sp., Ecuador.

Schiffnerula oyedaeae H. Sydow, Ann. Mycol. 28: 160, 1930.
On leaves of *Oyedaea verbesinoides*, Venezuela.

Schiffnerula secunda Höhn., Sitz. K. Akad. Wiss. Wien, math.-nat. Kl. I, Abt. 119: 412, 1910.

On leaves of Asteraceae member, Brazil.

According to Hughes (1984a), the affinity of this taxon is with that of *S. compositarum* (Thiess.) Petrak.

Schiffnerula spectabilis (Pat.) Petrak, Sydowia 4: 539, 1950.
= *Dimerosporium spectabilis* Pat. in Pat. & Lagerheim, Bull. Trimest. Soc. Mycol. France 9: 124-165, 1893.
On leaves of *Baccharis oblongifolia*, Ecuador.

Sarcinella milleriae Sydow, Ann. Mycol. 25: 152, 1927.
On leaves of *Milleria quinqueflorae*, Costa Rica.

Sarcinella vernoniae (Dearn. & Barth.) Hughes, Can. J. Bot. 61: 1748, 1983.
= *Stigmella vernoniae* Dearn. & Barth. in Dearn., Mycologia 21: 330, 1929.

= *Piricauda vernoniae* (Dearn. & Barth.) Moore, Rhodora 61: 106, 1959.

On leaves of *Vernonia gigantea*, USA.

Schiffnerula stellata (Speg.) Hughes, Pleomorphy in some hypophodiate fungi, p. 134, 1987.

= *Asterina stellata* Speg., Bolm. Acad. Nac. Cienc. Cordoba 11: 189, 1889.

= *Clypeolella stellata* (Speg.) Theiss., Centralbl. Bakt. 34: 323, 1912.

On leaves of *Weinmannia* sp.

Betulaceae

Schiffnerula pulchra (Sacc.) Petrak, Ann. Mycol. 26: 397, 1928.
On leaves of Betulaceae member, Southern Europe.

Bignoniaceae

Sarcinella bignoniacearum Satish Chandra, N. Srivast. & R. Chaudhary, Indian Phytopathol. 44: 302, 1991.

On leaves of *Oroxylum indicum*, India.

Buddlejaceae

Schiffnerula nuxiae Hansf., Proc. Linn. Soc. London 1944-45: 161, 1946.

On leaves of *Nuxia* sp. (*Lanchnopylidis* sp.), South Africa.

Burseraceae

Schiffnerula paraparensis Toro, J. Agric. Univ. Puerto Rico 22: 450, 1930.

On leaves of *Bursera tomentosa*, Venezuela.

Caesalpiniaceae

Schiffnerula cassiae Hansf., Proc. Linn. Soc. London 160: 151, 1949.

On leaves of *Cassia kirki*, Sierra Leone.

Sarcinella cassiae Butler in Munjal & Kapoor, Indian Phytopathol. 16: 91, 1963.

On leaves of *Cassia tora*, India.

Celastraceae

Schiffnerula gymnosporiae Hansf., Proc. Linn. Soc. London 1944-45: 159, 1946.

On leaves of *Gymnosporia buxifolia*, South Africa.

Schiffnerula hansfordii Hughes, Can. J. Bot. 61: 1763, 1983.

= *Clypeolella gymnosporiae* Hansf., Proc. Linn. Soc. London 157: 200, 1946.

On leaves of *Gymnosporia buxifolia*, Uganda.

Schiffnerula inversa (Hohn.) Hughes, Pleomorphy in some hypophodiate fungi, p.134, 1987.

= *Clypeolella inversa* (Sacc. & Trott.) Hohn., Sitz. K. Akad. Weiss. Wien. 119: 403, 1910.

On leaves of *Meytenus gonoclada*, Brazil.

Sarcinella gymnosporiae Subhedar & Rao ex Hosag., Zoos' Print J. 17: 835, 2002.

Sarcinella gymnosporiae Subhedar & Rao, Biovigyanam 1: 194, 1975 (*nom. invalid*).

On leaves of *Maytenus rothiana* (= *Gymnosporia rothiana*), India.

Sarcinella palawanensis (Sydow & Sydow) Sahni, Mycopath. Mycol. Appl. 29: 241, 1966.

On leaves of *Celastrus paniculatus*, India.

Sarcinella paniculati Verma, Tripathi & R.K. Chaudhary, Indian Phytopathol. 52: 379, 1999 (*panicutae*).

On leaves of *Celastrus paniculatus*, India.

Sarcinella shamboodarii Sharma, Rai & Vyas, Indian J. Mycol. Plant Pathol. 26: 313, 1996.

On leaves of *Cassine paniculata* (= *Elaeodendron glaucum*), India.

Sarcinella tandonii Mitter, Ann. Mycol. 35: 243, 1937.

On leaves of *Euonymus tingens*, India.

Combretaceae

Sarcinella jarwaensis Satishchandra, N. Srivast. & Chaudhary, Indian Phytopathol. 44: 304, 1991.

On leaves of *Terminalia chebula*, India.

Cornaceae

Schiffnerula corni Hughes, Mycologia 82: 657, 1990.

On leaves of *Cornus stolonifera*, Canada.

Sarcinella questieri (Desm.) Arn., Les Asterinees, Coulet et Fils, Montpellier, p. 188, 1918.

= *Coniothecium questieri* Desm., Plant. Crypt. Nord. Fr. No. 404, 1857.

= *Sarcinella questieri* (Desm.) Hohnel, Centralbl. Bakt. 60: 23, 1924.

= *Apiosporium corni* Wall., Flora Crypt. Germ. Pars Post. J.L. Schrag, Norimbergae, p. 862, 1833.

On leaves of *Cornus* spp., Europe and U.S.A.

Crypteroniaceae

Schiffnerula crypteroniae (Hansf.) Hughes, Pleomorphy in some hyphopodiate fungi, p.133, 1987.

= *Clypeolella crypteroniae* Hansf., Reinwardtia 3: 128, 1954.

On leaves of *Crypteronia paniculata*, Java.

Cunoniaceae

Schiffnerula radians (Sydow) Petrak, Ann. Mycol. 26: 400, 1928.

On leaves of *Cunonia capensis*, South Africa.

Diapensiaceae

Schiffnerula leemingii (Ellis & Everh.) Hughes, Pleomorphy in some hyphopodiate fungi, p. 134, 1987.

= *Asterina leemingii* Ellis & Everh., Proc. Acad. Nat. Sci. Phil. 1893: 128, 1893.

= *Clypeolella leemingii* (Ellis & Everh.) Theiss., Centralbl. Bakt. Abt. II, 34: 231, 1912.

On leaves of *Galax* sp.

Ebenaceae

Sarcinella gorakhpurensis Kamal & Singh, Sydowia 33: 155, 1980; Hughes, Pleomorphy in some hyphopodiate fungi, p.110, 1987.

= *Sarcinella diospyri* Rajak & Soni, Indian J. Mycol. Plant. Pathol. 11: 89, 1981.

On leaves of *Diospyros melanoxylon*, India.

Ericaceae

Schiffnerula vaccini Hansf., Sydowia Beih. 1: 88, 1957.

On leaves of *Vaccinium reticulatum*, Hawaii.

Euphorbiaceae

Schiffnerula ambigua Petrak, Ann. Mycol. 29: 256, 1931.

On leaves of *Macaranga* sp., Philippines.

Schiffnerula brideliae Hansf., Proc. Linn. Soc. London 1940-41: 12, 1941.

On leaves of *Bridelia macrantha*, Uganda.

Schiffnerula crotonis Hansf., Proc. Linn. Soc. London 160: 116, 1949.

On leaves of *Croton gossypifolius*, Costa Rica.

Schiffnerula ricini Hansf., Proc. Linn. Soc. London 150: 117, 1949.

On leaves of *Ricinus communis*, Sierra Leone.

Hughes (1983) treated *Clypeolella ricini* Racib. as synonymous

to *Schiffnerula ricini* Hansf.

Sarcinella acalyphae H. Sydow, Ann. Mycol. 28: 219, 1930.

On leaves of *Acalypha cuspidata*, Venezuela.

Sarcinella indica Kamal & P. Narayan, Indian Phytopathol. 39: 200, 1987.

On leaves of *Sapium insigne*, India.

Sarcinella indica S. Chandra, Srivast. & Chaudhary, Indian Phytopathol. 44: 303, 1991.

On leaves of *Sapium insigne*, India.

Fabaceae

Clypeolella dalhousiae Hansf., Rec. Inst. Nat. Etud. Agron. Congo Belge 2: 50, 1945.

On leaves of *Dalhousea* sp., Belgian Congo.

Fagaceae

Questieriella quercina Hughes, Can. J. Bot. 64: 1591, 1986.

On leaves of *Quercus* sp., Costa Rica.

Sarcinella quercina Verma & Kamal, Trans. Brit. Mycol. Soc. 89: 70, 1987.

On leaves of *Quercus dilatata*, India.

Flacourtiaceae

Digitosarcinella caseariae Hughes, Can. J. Bot. 62: 2208, 1984.

On leaves of *Casearia sylvestris*, Brazil.

Questieriella caseariae (Viegas) Hughes, Can. J. Bot. 62: 2212, 1984.

= *Amazonia caseariae* Viegas, Bragantia 4: 33, 1944.

On leaves of *Caesaria sylvestris*, Brazil.

Sarcinella manilensis (Sacc.) Kranz, Sydowia 20: 211-217, 1968.

On leaves of *Flacourtia* sp., Philippines.

Hippocrateaceae

Schiffnerula hippocrateae Hansf., Proc. Linn. Soc. London 150: 166, 1949.

On leaves of *Hippocratea velutina*, Sierra Leone.

Schiffnerula salaciae (Hansf.) Hughes, Can. J. Bot. 61: 1763, 1983.

= *Clypeolella salaciae* Hansf., Proc. Linn. Soc. London 157: 31, 1945.

On leaves of *Salacia* sp., Uganda.

Sarcinella hippocrateae N. Srivastava, S. Chandra & C. Gupta, Vegetos 3: 78, 1990.

On leaves of *Reissantia arborea* (= *Hippocratea arborea*), India.

Icacinaceae

Sarcinella hughesii Hosag. & Venkanna, J. Econ. Taxon. Bot. 17: 457, 1993.

On leaves of *Nothapodytes nimmoniana* (= *N. foetida*), India.

Juglandaceae

Sarcinella heterospora Sacc., Nuovo G. Bot. Ital. 7: 299, 1875.
On leaves of *Juglans regia*, Italy.

Lamiaceae

Schiffnerula andina H. Sydow, Ann. Mycol. 37: 389, 1939.
On leaves of *Bystropogon tomentosum*, Ecuador.

Schiffnerula salviae Hansf., Sydowia 9: 79, 1955.
On leaves of *Salvia constanza*, San Domingo.

Sarcinella colebrookiana Kamal & Singh, Sydowia 33: 152, 1980.

On leaves of *Colebrookia oppositifolia*, India.

Lauraceae

Schiffnerula carnea (Ellis & Mart.) Petrak, Ann. Mycol. 26: 396, 1928.

On leaves of Lauraceae member, Africa.

Linaceae

Sarcinella hugoniae Hosag. & Kamarudeen, Zoos' Print J. 17: 835, 2002.

On leaves of *Hugonia mystax*, India

Loganiaceae

Schiffnerula nuxiae Hansf., J. Linn. Soc. London 151: 161, 1946.

On leaves of *Nuxia (Lachnopylidis)* sp., South Africa.

Schiffnerula spigeliae Hansf., Proc. Linn. Soc. London 150: 117, 1949.

On leaves of *Spigelia anthelmia*, Sierra Leone.

Lythraceae

Sarcinella lagerstroemiae Hosag. & Mohanan, New Botanist 22: 31, 1995.

On leaves of *Lagerstroemia parviflora*, India.

Malvaceae

Schiffnerula domingoensis Petrak & Ciferri, Ann. Mycol. 28: 400, 1930.

On leaves of *Sida linifolia*, San Domingo.

Malpighiaceae

Schiffnerula afflata (Winter) Theiss., Bot. Centralbl. Beih. 29: 45-73, 1912.

On the leaves of Byrsonaceae member, Brazil.

The genus *Byrsonima* Rich ex Kunth has been treated under the family Malpighiaceae (Willis, 1973).

Melastomataceae

Schiffnerula towarensis Sydow, Ann. Mycol. 28: 162, 1930.

On leaves of *Monochaetum hirtus*, Venezuela.

Meliaceae

Schiffnerula entandrophragmatis Hansf., Proc. Linn. Soc. London 158: 30, 1947.

On leaves of *Entandrophragma angolense*, Uganda.

Sarcinella azadirachtae Meenu, Singh & Chaudhary, J. Living World 1: 107, 1994.

On leaves of *Azadirachta indica*, Nepal.

Menispermaceae

Schiffnerula sp.

On leaves of *Cissampelos mucronata*, Uganda.

Monimiaceae

Schiffnerula doryphorae (H. Sydow) Hughes, Pleomorphy in some hyphopodiate fungi, p. 134, 1987.

= *Clypeolella doryphorae* H. Sydow, Ann. Mycol. 35: 43, 1937.

On leaves of *Doryphora sassafras*, New South Wales.

Moraceae

Schiffnerula fici Sahni, Mycopath. et Mycol. Appl. 23: 328-338, 1964.

On leaves of *Ficus infectoria*, India.

Myrsinaceae

Schiffnerula robusta Orejuela, Mycologia 36: 440, 1944.

On leaves of *Rapanea* sp., Colombia.

Oleaceae

Schiffnerula pulchra (Sacc.) Petrak, Ann. Mycol. 26: 397, 1928.

= *Apiosporium pulchrum* Sacc., Thumen, Mycotheca Universalis No. 52, 1875.

= *Dimerosporium pulchrum* Sacc., Nuovo G. Bot. Ital. 7: 299, 1875.

= *Dimerina pulchra* (Sacc.) Theiss., Bot. Centralbl. Beih. 29: 64, 1912.

= *Questiera pulchra* (Sacc.) Arnaud, Les Asterinees, p. 187, 1918.

Synanamorph : *Sarcinella heterospora* Sacc., Fungi Italici no. 126, 1877.

On leaves of *Ligustrum vulgare* and *Fraxinus* sp., USA and Italy.

Schiffnerula sp.

On leaves of *Jasminum* sp., Uganda.

Questieriella pulchra Hughes, Can. J. Bot. 61: 1730, 1983.

On leaves of *Ligustrum vulgare*, Europe.

Sarcinella quadrata (Cooke) Hughes, Can. J. Bot. 61: 1741, 1983.

= *Epochnium quadratum* Cooke, Grevillea 12: 33, 1883.

= *Stemphylium quadratum* (Cooke) Sacc., Syll. Fung. 4: 521, 1886.

= *Tetracoccusporium quadratum* (Cooke) Whilt Shire, Trans. Brit. Mycol. Soc. 21: 237, 1938.

On leaves of *Fraxinus* sp., USA.

Passifloraceae

Schiffnerula mirabilis Hohn., Sitz. K. Akad. Wiss. Wien., math.-nat. kl. I Abt. 118: 867, 1909.

= *Schiffnerula pitteriana* Sydow, Ann. Mycol. 28: 161, 1930.

= *Schiffnerula malabarensis* Ramakr. & Sund., Proc. Indian Acad. Sci. 38: 188, 1953.

On leaves of *Passiflora foetida*, *P. edulis*, *Passiflora* sp., India, Venezuela, Uganda.

Hughes (1987) suggested this synonymy.

Periplocaceae

Schiffnerula cryptolepidis (Patil & Thite) Hughes, Pleomorphy in some hyphopodiate fungi, p. 133, 1987.

= *Clypeolella cryptolepidis* Patil & Thite, M.V.M. Patrika 9: 104, 1974.

Synanamorph: *Sarcinella cryptolepidis* Pande, M.V.M. Patrika 13: 1, 1978.

On leaves of *Cryptolepis buchananii*, India.

Rhamnaceae

Schiffnerula alphitoniae (H. Sydow) Hughes, Pleomorphy in some hyphopodiate fungi, p. 133, 1987.

= *Clypeolella alphitoniae* H. Sydow, Ann. Mycol. 35: 42, 1937.

On leaves of *Alphitonia excelsa*, New South Wales.

Schiffnerula rhamnocola (Doidge) Hughes, Pleomorphy in some hyphopodiate fungi, p. 134, 1987.

= *Asterina rhamnocola* Doidge, Trans. Royal Soc. South Africa 8: 255, 1920.

= *Clypeolella rhamnocola* (Doidge) Doidge, Bothalia 4: 314, 1942.

On leaves of *Rhamnus prinoides*, South Africa.

Schiffnerula ziziphi (Yates) Hughes, Pleomorphy in some hyphopodiate fungi, p. 134, 1987.

= *Asterina ziziphi* Yates, Phillipine J. Sc. C. Bot. 13: 375, 1918 (*zizyphiae*).

= *Clypeolella ziziphi* (Yates) Hansf., Proc. Linn. Soc. London 160: 152, 1949.

= *Clypeolella ziziphina* Thaug, Trans. Brit. Mycol. Soc. 63: 622, 1974

= *Schiffnerula ziziphina* (Thaug) Hughes, Can. J. Bot. 62: 1842, 1984.

On leaves of *Ziziphus* sp., Philippines.

Rosaceae

Schiffnerula rubi H. Sydow, Ann. Mycol. 35: 33, 1937.

On leaves of *Rubus morei*, New South Wales.

Sarcinella prunicola Pavgi & Singh, Sydowia 24: 113-119, 1970.

On leaves of *Prunus* spp., India.

Rubiaceae

Schiffnerula craterispermi (Hansf.) Hughes, Pleomorphy in some hyphopodiate fungi, p. 133, 1987.

= *Clypeolella craterispermi* Hansf., Proc. Linn. Soc. London 157: 31, 1945.

Synanamorphs: *Questieriella craterispermi* (Hansf.) Hughes, Can. J. Bot. 61: 1751, 1983.

Mitteriella craterispermi Hansf., Proc. Linn. Soc. London 157: 31, 1945.

On leaves of *Craterispermum laurinum*, Uganda.

Schiffnerula hendrickxii (Hansf.) Hughes, Pleomorphy in some hyphopodiate fungi, p. 134, 1987.

= *Clypeolella hendrickxii* Hansf., Proc. Linn. Soc. London 158: 44, 1947.

On leaves of *Grumilea* sp., Belgium Congo.

Schiffnerula psychotriae (Doidge) Hughes, Pleomorphy in some hyphopodiate fungi, p. 134, 1987.

= *Calothyrium psychotriae* Doidge, Bothalia 1: 76, 1922.

= *Clypeolella psychotriae* (Doidge) Doidge, Bothalia 4: 313, 1942.

On leaves of *Psychotria capensis*, South Africa.

Schiffnerula palicoureae (Farr) Hughes, Pleomorphy in some hyphopodiate fungi, p. 134, 1987.

= *Clypeolella palicoureae* Farr, Can. J. Bot. 47: 376, 1969.

On leaves of *Palicourea crocea*, Dominica.

Schiffnerula ugandensis (Hansf.) Hughes, Pleomorphy in some hyphopodiate fungi, p. 134, 1987.

= *Clypeolella ugandensis* Hansf., Proc. Linn. Soc. London 157: 201, 1946.

On leaves of Rubiaceae member (? *Pavetta*), Uganda.

This has affinity with *S. craterispermi* (Hansf.) Hughes (Hughes, 1987).

Questieriella braunii Hosag., Abraham & C.K. Biju, New Botanist 23: 211, 1996.

On leaves of *Morinda pubescens*, India.

Rutaceae

Schiffnerula toddaliae Hansf., Proc. Linn. Soc. London 1940-41: 13, 1941.

On leaves of *Toddalia asiatica*, Uganda.

Clypeolella toddaliae Hansf. appears to be closely related to this taxon (Hughes, 1987).

Sarcinella glycosmidis Kamal & Singh, Sydowia 33: 154, 1980.

On leaves of *Glycosmis pentaphylla*, India.

Sarcinella fumosa Sahni, Mycopath. et Mycol. Appl. 23: 328-338, 1964.

On leaves of *Aegle marmelos*, India.

Sapindaceae

Schiffnerula allophyli Hansf., Proc. Linn. Soc. London 1944-45: 160, 1946.

On leaves of *Allophylus* sp., Uganda.

Sapotaceae

Schiffnerula sp.

On leaves of *Mimusops obovata*, South Africa.

Scrophulariaceae

Schiffnerula scopariae Hansf., Proc. Linn. Soc. London 160: 117, 1949.

On leaves of *Scoparia dulcis*, Sierra Leone.

Solanaceae

Schiffnerula costaricensis Hansf., Proc. Linn. Soc. London 160: 150, 1949.

On leaves of *Solanum laurifolium*, Costa Rica.

Schiffnerula lisianthi Hansf., Sydowia Beih. 1: 88, 1957.

On leaves of *Lisianthus grandiflorus*, British Guiana.

Schiffnerula solani Hansf., Proc. Linn. Soc. London 150: 118, 1949.

On leaves of *Solanum melongena*, Sierra Leone.

Schiffnerula theissenii Hughes, Pleomorphy in some hyphopodiate fungi, p. 134, 1987.

= *Clypeolella solani* Theissen, Central Bakt. Abt. II. 34: 233, 1912 (non *S. solani* Theissen).

On leaves of *Solanum* sp., Brazil.

Sarcinella raimundi Sacc., Ann. Mycol. 12: 282-314, 1914.

On leaves of *Solanum melongena*, Philippines

Theaceae

Schiffnerula camelliae (Sydow, Sydow & Butler) Hughes, Pleomorphy in some hyphopodiate fungi, p. 133, 1987.

= *Asterina camelliae* Sydow, Sydow & Butler, Ann. Mycol. 9: 389, 1911.

= *Clypeolella camelliae* (Sydow, Sydow & Butler) Hansf., Reinwardtia 3: 127, 1954.

On leaves of *Camellia sinensis*, India and Java.

Thymelaeaceae

Schiffnerula sp.

On leaves of *Peddiea africana*, South Africa.

Ulmaceae

Schiffnerula tremae H. Sydow, Ann. Mycol. 28: 164, 1930.

On leaves of *Trema micrantha*, Venezuela.

According to Hughes (1987), the anamorph belongs to *Capnodiastrum*.

Verbenaceae

Schiffnerula tectonae (Thite & Patil) V.B. Hosagoudar, comb. nov.

= *Clypeolella tectonae* Thite & Patil, Geophytology 15: 84,

1985.

On leaves of *Tectona grandis*, India.

Schiffnerula viticis Hansf., Proc. Linn. Soc. London 1944-45: 162, 1946.

On leaves of *Vitex fischeri*, Uganda.

Sarcinella jabalpurensis Rajak. & Soni, Indian J. Mycol. Plant Pathol. 11: 91, 1981.

On leaves of *Vitex negundo*, India.

Sarcinella viticis N. Srivastava, S. Chandra & C. Gupta, Vegetos 3: 78, 1990.

On leaves of *Vitex negundo*, India.

Vitaceae

Schiffnerula cissi Hansf., Proc. Linn. Soc. London 1944-45: 160, 1946.

On leaves of Vitaceae member and *Rhoicissus revoillii*, Uganda.

Sarcinella latifoliae N. Srivastava, S. Chandra & C. Gupta, Vegetos 3: 75, 1990.

On leaves of *Ampelocissus latifolia*, India.

On unknown host

Sarcinella asiatica Kamal, Rai & Morgan-Jones, Mycotaxon 20: 589, 1984.

On an unknown host, India.

List of doubtful species

1. *Schiffnerula ambigena* Petrak.

The morphology of the hyphae and ascoma do not belong to this genus.

2. *Schiffnerula ambionensis* (Sydow) Petrak.

This is the type species of the genus *Diathypton* Sydow.

3. *Schiffnerula bella* Petrak

Hughes (1987) stated that it is a doubtful species of this genus.

4. *Schiffnerula clemensiae* Petrak.

This is a synonym of *Rhytidenglerula tremae* (H. Sydow) Arx (Muller & Arx, 1962).

5. *Schiffnerula monothea* (Pat.) Petrak.

Presence of intercalary pycnothyria, rough walled dark brown ascospores in the asci excludes this taxon from this genus (Hughes, 1987).

6. *Schiffnerula trachysperma* Petrak.

Because of the presence of setose hyphae, it cannot belong to this genus (Hughes, 1987).

7. *Schiffnerula vilis* Petrak

This is *Rhytidenglerula vilis* (Petrak) Arx (Muller & Arx, 1962).

8. *Clypeolella apus* Theissen.

Hyphae without appressoria.

9. *Clypeolella clermontiae* Stevens & Ryan

Appressoria two celled.

10. *Clypeolella dalhousiae* Hansf.

Hyphae without appressoria.

11. *Clypeolella ligustrinae* Bat. & Pers.

This is *Asterina ligustrinae* (Bat. & Peres) Hughes.

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