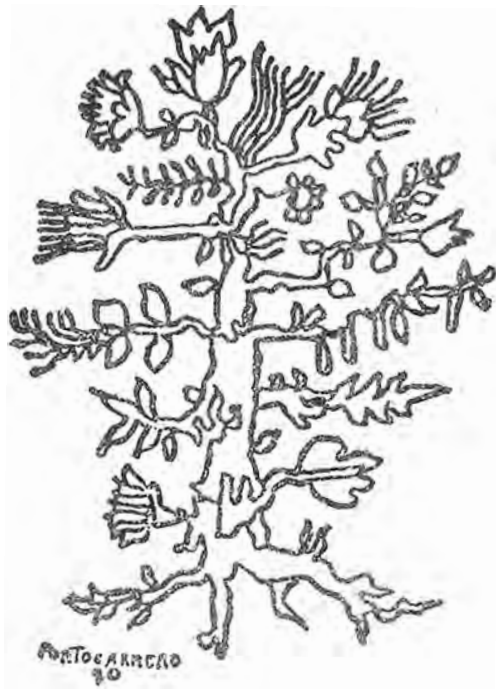


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Hyphomycetes from Loma de la Coca and some localities of La Habana and Matanzas provinces, Cuba*

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ABSTRACT. Sixty-seven species of hyphomycetes belonging to 48 genera are reported; of these, 10 species are new records for Cuba. This material was collected during February and March, 1981, at Loma de la Coca and several other interesting localities.

INTRODUCTION

The majority of the hyphomycetes collected by us in the spring of 1981 during several excursions to the north coast of La Habana and Matanzas provinces are herein recorded. One of the localities was Loma de la Coca (ca. 142 m above sea level), approximately 3 km southeast from Campo Florido, a town at Jaruco, La Habana province. This hill is distant from the coast about 7 km and is formed by ultrabasic rocks surrounded by a calcareous zone. From the botanical point of view, it is a very interesting locality inhabited by many endemics, some of them locally characterized. The phanerogamic flora of this hill shows some affinity with that of the serpentinic bed-rock extending from the east shore of La Habana Bay up to Canasí, in Matanzas Province, and also has some relation to the xerophytic coastal thicket vegetation, proper of the surrounding area. The typical vegetation of Loma de la Coca is characterized by palms and spiny species such as *Coccothrinax miraguama*, *Copernicia macroglossa* and *Pithecellobium hystrix*. The north slope of the hill is reforested with *Casuarina* and at the south slope there is a dam which undoubtedly influences the humidity of the air. Some parts of the hill are also synantropized.

Samples of hyphomycetes were collected on dead herbaceous stems, dead petioles and rachides of palms, on bark, dead wood, branches, branchelets and dead leaves of undetermined broad-leaved trees, and from litter. Six new species found at Loma de la Coca were published previously (Holubová-Jechová, 1987), and they are also mentioned here.

Some other interesting localities in the north coast of La Habana and Matanzas provinces and adjacent valleys were also visited in the spring of 1981. All collections cited in the survey below are from the following localities: At La

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Habana Province, Loma de la Coca, S of Campo Florido, and the town of Campo Florido, both at Jaruco; Loma Jibacoa and the coastal area of Playa Jibacoa, N of Jibacoa; and Arroyo Bermejo, NE of Jibacoa. At Matanzas Province, valley of Río Bacunayagua, NW of Matanzas City, and the coastal area of Punta Seboruco, N of Matanzas City.

Sixty-seven species of hyphomycetes belonging to 48 genera were found during our investigation. Ten species (marked with an asterisk) are new records for Cuba.

SURVEY OF SPECIES

**Acremonium polychromum* (van Beyma) W. Gams, in *Cephalosporium-artige Schimmelpilze*, pp. 81-82, 1971.

On a dead stem of an inflorescence of *Roystonea regia*. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842341).

Phialides without septa, directly arising from basal hyphae, hyaline, sometimes very slightly pigmented, up to 32 μm long, 2-2,5 μm wide near the base, narrowing to the apex, up to 1,5 μm wide. Conidia obovoid, olivaceous brown, smooth to inconspicuously verrucose, 3,7-5 X 2-2,5 (-3) μm , in long dry chains.

Common in warmer regions on different substrates.

Acrodictys bambusicola M. B. Ellis, Mycol. Pap., Kew. 79:6, 1961.

On dead stems of *Arthrostylidium* sp. (Gramineae) and *Bambusa* sp. Loma de La Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842342) and A. Mercado (HAC 6100). Río Bacunayagua, 26. III. 1981, coll. A. Mercado (HAC 6299).

Colonies effuse, brown to dark brown. Conidiophores brown, 80-220 μm long, 5,5-7 μm thick in the broadest part, tapering to 2,5-3,8 μm at the apex. Conidia brown to pale brown, with 2-5 transverse and 1 or more longitudinal septa, 17-26 μm long, 9,5-13,5 μm wide in the broadest part, 2-3,8 μm wide at the truncate base.

Known on bamboo from Uganda, Venezuela and Cuba (Holubová-Jechová and Mercado, 1984, 1986).

Allescheriella crocea (Mont.) Hughes, *apud* Baker *et* Dale, Mycol. Pap., Kew, 33:97, 1951.

On a dead trunk of *Dendrocereus nudiflorus*. Punta Seboruco, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842334).

Very common on rotten wood of various trees in tropical and subtropical areas, also known from Cuba (Holubová-Jechová and Mercado, 1984).

**Bactrodesmium curvatum* P. M. Kirk, Mycotaxon, 23:306-308, 1985.

On a dead petiole of *Roystonea regia*. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM).

Conidiophores hyaline to very pale brown, branched or unbranched, 10-30 μm long, 2-3 μm wide, single or fasciculate, often overgrowing the synnemata of *Phaeoisaria clematidis*. Conidia subglobose to broadly pyriform, proximally abruptly curved, 2-3 septate, smooth, brown to dark brown, with the terminal cell darker than the lower cells, 22-28 μm long, 14-18 μm wide in the broadest part.

This species was recently described from Kenya. Cuban collection differs from the original description in shorter conidiophores and in slightly smaller conidia.

Berkleasmium inflatum Hol.-Jech., Ceska Mykol., 41:29-31, 1987.

On a dead rotten branch of an undetermined tree. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842730).

Sporodochia scattered, pulvinate, black, shining. Mycelium immersed in the substratum, forming small prosenchymatic stromata. Conidiophores closely aggregated, hyaline, unbranched, up to 48 μm long, 2-4 μm wide, with one or three bladdery swellings 6-9,5 μm wide. Conidia solitary, muriform, ellipsoidal, clavate, obovate or pyriform, with a truncate basal scar, golden brown, smooth, 40-48 X 19,5-21 μm , slightly constricted in septa.

This species differs from all known species of *Berkleasium* by its characteristically inflated conidiophores. Up to now, the fungus has been collected only at Loma de la Coca.

Brachysporiella dennisi Crane et Dumont, Canadian J. Bot., 56:2613, 1978.

On a dead petiole and rachis of an undetermined palm-tree. Loma de la Coca, 13. II. 1981, coll. A. Mercado, det. V. Holubová-Jechová (HAC 6067, 6093; PRM 842346).

Hitherto collected in Venezuela (Crane and Dumont, 1978) and in Cuba (Mercado, 1982b, 1984; Holubová-Jechová and Mercado, 1984) on different decaying herbaceous stems and rotten branches.

Brachysporiella gayana Batista, Bol. Secr. Agr. Ind. Com. Est. Pernambuco, 19:109, 1952.

On a dead petiole of *Roystonea regia*. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM).

Common on decaying wood of various broad-leaved trees and palms in tropical and subtropical areas (USA, Brazil, Ghana, Sierra Leone); also in Cuba (Mercado, 1981; Holubová-Jechová and Mercado, 1984, 1986).

**Chloridium preussii* W. Gams et Hol.-Jech.; Stud. Mycol., Baarn, 13:35-37, 1976.

On a dead branch. Loma de la Coca, 13. II. 1981, coll. Holubová-Jechová (PRM 842347).

Conidiophores dark brown, 40-100 μm long, 2,5-3,5 μm wide, tapering to 1-1,5 μm wide in apical part below the flaring collarette; a geniculate appearance after several percurrent proliferations. Conidia hyaline, ellipsoidal, 2,5-3,5 X 1,5-2 μm in slimy heads.

This fungus probably has a worldwide distribution; up to now it is known only from different European countries, England and Canada, overgrowing rotten wood and bark.

**Cladosporium cladosporioides* (Frasen.) de Vries, Contribution . . . *Cladosporium* . . ., p. 57, 1952.

On living leaves of an undetermined tree. Campo Florido, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842366).

A common cosmopolitan species on different plants. Recorded for the first time for Cuba.

Cladosporium oxysporum Berk. et Curt., J. Linnean Soc., 10(46):362, 1868.

On a dead petiole and part of a fruit of *Roystonea regia*, and on dead roots of an undetermined tree. Arroyo Bermejo, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842364, 842345).

Common and widespread species in the tropics and in Cuba, too.

Cladosporium tenuissimum Cooke, Grevillea, 6:140, 1878.

On a dead petiole of *Roystonea regia*. Arroyo Bermejo, 26. III. 1981, coll. A. Mercado (HAC 6294).

Colonies effuse, pale brown, hairy. Conidiophores up to 860 μm long, 3-5,7 μm wide, brown. Conidia catenate, ellipsoidal or subspherical, pale olivaceous brown, 0-1 septate, smooth, 3,5-22 X 3,5-5,7 μm .

A cosmopolitan species; already reported from Cuba (Holubová-Jechová and Mercado, 1986).

**Dactylaria intermedia* Matsushima, Matsushima Mycol. Mem., 1:25-27, 1980.

On a dead branch. Loma Jibacoa, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842332).

Colonies effuse, whitish. Conidiophores hyaline, cylindrical, 0-2 septate, 7-28 μm long, 2,5-4 μm wide near the base, narrowing to the denticulate apex, at the apex up to 3 μm , below the apex 1,5-2 μm wide. Conidia hyaline, cylindrical-fusiform, 1-septate, 10-15 X 2-3 μm .

The fungus was recently described from Taiwan. Cuban material differs from the original description by shorter conidiophores and slightly smaller conidia; however, Matsushima described the fungus from a living culture growing on agar media.

Dendryphiopsis atra (Corda) Hughes, Canadian J. Bot., 31:655, 1953.

On a dead trunk of *Euphorbia* sp. Punta Seboruco, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842368).

Conidia 3-4-septate, cylindrically ellipsoidal, dark rusty brown, 44,5-56 X 16-21 μm . The collected fungus is quite corresponding in its shape and size to the same fungus collected in Czechoslovakia, in different localities in Europe and in Canada, but it differs in the colour of the walls, which in European and North American material is smoky or olivaceous brown; in Cuban material it is dark rusty brown. The occurrence of this fungus was reported several times in Cuba (Mercado, 1981, 1984; Holubová-Jechová and Mercado, 1984).

Dictyosporium heptasporum (Garov.) Damon, Lloydia, 15:118, 1952.

On a dead petiole of *Roystonea regia*. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová.

On dead wood and bark of various trees in Europe, India and North America; recently also reported from Cuba (Mercado, 1981, 1984).

Diplocladiella scalaroides Arnaud in M. B. Ellis, More dematiaceous hyphomycetes, pp. 229-230, 1976.

On a dead trunk of *Euphorbia* sp. Punta Seboruco, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842368).

Hitherto known only from Great Britain, Europe (France and Czechoslovakia) and Japan (Matsushima, 1975; Ellis, 1976); recently also reported from Cuba (Castañeda, 1986).

Ellisiopsis galesiae Batista et Nascimento, An. Soc. Biol. Pernambuco, 14:21, 1956.

On dead leaves of *Clusia rosea*. Loma de la Coca, 13. II. 1981, coll. A. Mercado (HAC 6094).

Colonies effuse, velutinous, brown. Conidiophores up to 23 μm long, 4,5-7 μm wide. Setae, 100-250 μm long, 5,5-6,5 μm wide at the base. Conidia turbinate, pale olivaceous, aseptate, 17-27 X 5-8 μm .

Known from dead leaves from Brazil, Japan, Pakistan, West Africa and Cuba (Ellis, 1971; Mercado, 1981, 1984).

Dischloridium tenuisporum Hol.-Jech., Ceska Mykol., 41:31, 1987.

On dead leaves of *Clusia rosea*. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842727).

Colonies scattered. Stroma immersed, dark brown, composed of angular pseudo-parenchyma. Conidiophores fasciculate, cylindrical, brown, paler towards the apex, septate, thick-walled, smooth, 80-200 μm long, 4-5 μm wide, percurrently proliferating. Conidiogenous cells phialidic, 18-38 μm long, narrowing at the apex, channel narrow, collarete inconspicuous. Conidia hyaline, aseptate, ellipsoidal to elongate ellipsoidal, thin-walled, smooth, guttulate, 10-18 X 3,5-5 μm , truncate at the base or with a small truncate papilla.

Up to now, the fungus has been collected only at Loma de la Coca.

Epicoecum purpurascens Ehrenb. ex Schlecht., Flora Berol., 2(Crypt.):136, 1824.

On a dead petiole and part of a fruit of *Roystonea regia*. Arroyo Bermejo, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842364).

A cosmopolitan and very common species; recently reported from Cuba (Mercado, 1981, 1984).

Endocalyx melanoxanthus (Berk. et Br.), Petch, Ann. Bot., London, 22:389, 1908.

On dead rachides of a palm tree. Loma de la Coca, 13. II. 1981, coll. A. Mercado (HAC 6067, 6068).

Very common in Cuba (Mercado, 1982b, 1984; Holubová-Jechová and Mercado, 1984, 1986).

Eversia parvula Hol.-Jech., Ceska Mykol., 41:31-33, 1987

On rotten wood and dead branches of an undetermined tree. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842725).

Colonies scattered, slightly pulvinate, dark brown, with an ochraceous margin. Mycelium partly immersed, partly superficial, composed of branched, septate, anastomosing, subhyaline to pale brown, 1,5-2,5 μm wide hyphae. Conidiophores pale brown, septate, 7-23 μm long, 2,5-4 μm wide. Conidiogenous cells with one or more thick-walled and dark-brown annulations, forming a dark ring on the top of conidiophores. Conidia oblong, flattened, muriform, pale brown to brown, 14-20 μm long, 7-9 μm wide, 6-7 μm wide from the side part, formed by two closely appressed arms, attached to the conidiogenous cells by one of the arms; the second arm with a rounded end. Sterile mycelium surrounding colony pale brown to subhyaline, widely branched, septate, anastomosing, 1,8-2,8 μm wide.

Up to now, the fungus has been collected only at Loma de la Coca.

Gyothyrix circinata (Berk. et Curt.) Hughes, Canadian J. Bot., 36:771, 1958.

On dead branches of an undetermined tree and on a dead petiole of a palm tree. Loma Jibacoa, Arroyo Bermejo and Valley of Río Bacunayagua, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842329, 842333) and A. Mercado (HAC 6287, 6293).

Very common in Cuba (Mercado, 1981, 1984; Holubová-Jechová and Mercado, 1984).

Gyrothrix podosperma (Corda) Rabenh., Deutschland Krypt.-Fl., 1:72, 1844.

On a dead petiole of a palm tree. Loma Jibacoa, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842337).

Common in Cuba (Mercado, 1982*b*, 1984).

Haplotrichum curtisii (Berk.) Hol.-Jech., Ceska Mykol., 30:4, 1976.

On a dead trunk of *Euphorbia* sp. Punta Seboruco, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842368).

Common in Cuba on dead rotten wood and bark (Holubová-Jechová and Mercado, 1984, 1986).

Helicoma ambiens Morgan, Cincinnati Soc. Nat. Hist. J., 15-45, 1892.

On a dead rachis of a palm tree and on dead petioles of *Roystonea regia*. Loma de la Coca, 13. II. 1981, coll. A. Mercado (HAC 6098); Río Bacunayagua, 26. III. 1981, coll. A. Mercado (HAC 6307).

Very common fungus in Cuba (Mercado, 1982*a, b*, 1984; Holubová-Jechová and Mercado, 1986).

Helicoma divaricata Hol.-Jech., Ceska Mykol., 42:33-34, 1987.

On dead petiole of *Roystonea regia*. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842726).

Colonies loosely hairy to cottony, brown. Conidiophores straight to slightly flexuous and nodulose, dichotomously branched two or four times, divaricate, brown, thick-walled, thin-septate, denticulate, 100-350 μm long, 4-5 μm thick, at the base 6-7 μm thick, at the apex paler to subhyaline, thin-walled, attenuated and ending in a truncate conidigenous denticle. Conidia hyaline or subhyaline to pale yellow brown, smooth, 11,5-16 μm in diameter, filament 4,5-6,5 μm wide, with 4-9 (mostly 8) hyaline septa, tightly 1 1/4-1 1/2 coiled, the extreme cell rounded, the basal cell slightly attenuated, conico-rounded (U-shaped), with thin, flat basal scar, 1-1,5 μm wide, situated excentrically towards the outside of the coil.

Helicoma muelleri Corda anam. of *Thaxteria pezizula* (Berk. et Curt.) Petrak, Corda, Icon. Fung., 1:15, 1837; Petrak, Sydowia, 7:110, 1953.

On dead branches and on a dead petiole of a palm tree. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842351); Arroyo Bermejo and Valley of Río Bacunayagua, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842359, 842353 with the teleomorph).

A cosmopolitan species; very common in Cuba too (Holubová-Jechová, 1984, 1986).

Helicorhoidion botryoides (Cooke) Hughes, Canadian J. Bot., 36:773, 1958.

On dead branches of an undetermined tree. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842351).

A very common fungus in Cuba (Mercado, 1981, 1982*a*, 1984; Holubová-Jechová et Mercado, 1984).

Helicosporium griseum Berk. et Curt., Grevillea, 3:51, 1874.

On dead petioles and dead trunks of *Roystonea regia* and different palm trees. Loma de la Coca and Arroyo Bermejo, 13. II. 1981 and 26. III. 1981, respectively, coll. V. Holubová-Jechová (PRM 842355, 842357).

A cosmopolitan species; very common in Cuba too (Holubová-Jechová and Mercado, 1984, 1986).

Helminthosporium foveolatum Pat., J. Bot., Paris, 5:321, 1891.

On dead culms of *Bambusa* sp. Valley of Río Bacunayagua, 26. III. 1981, coll. V. Holubová-Jechová and A. Mercado (HAC 6281).

Colonies effuse, brown. Conidiophores pale brown to brown, 40-200 μm long, 3,8-6,5 μm wide. Conidia obclavate, sometimes rostrate, pale brown, up to 10-septate, 25-75 X 6,5-8 μm .

Common in tropical and subtropical areas on dead culms of bamboos and on palms; known also from Cuba (Mercado, 1981, 1984; Holubová-Jechová and Mercado, 1986).

Hermatomyces tucumanensis Speg., An. Mus. Nacl. Hist. Nat. Buenos Aires, ser. 3, 13:446, 1911.

On a dead petiole of an undetermined palm tree. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842348).

On dead branches and rachides of palm trees in Argentina, Ghana and Sierra Leone (Ellis, 1971); reported from Cuba by Mercado (1982b, 1984).

Holubovaea roystonicola Mercado, Acta Bot. Cubana, 15:7-9, 1983.

On dead petioles of *Roystonea regia*. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842365) and A. Mercado (HAC 6102); Loma Jibacoa, 26. III. 1981, coll. A. Mercado (HAC 6285); Valley of Río Bacunayagua, 26. III. 1981, coll. A. Mercado (HAC 6296).

This species was recently described from Cuba (Mercado, 1983; Holubová-Jechová and Mercado, 1984, 1986); frequently collected only on dead petioles of *Roystonea regia*.

Masoniomyces claviformis Crane et Dumont, Canadian J. Bot., 53:847, 1975.

On a dead branch and dead wood. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 942356) and A. Mercado (HAC 6087). Colonies effuse, gray.

Conidiophores brown to midbrown, verrucose, up to 700 μm long, 7,5-10 μm wide at the base. Conidial heads clavate, up to 50 μm long, 10-18 μm wide at the apex. Conidiogenous cells discrete, polyblastic. Conidia ellipsoidal to slightly fusiform, aseptate, subhyaline, 7,5-13 X 1,6-2 μm . The fungus collected in Cuba has, however, conidia shorter than those described by Crane and Dumont from the original material. Closely related species are mostly some anamorphs of species of *Hypoxylon* or *Nummularia* (Xylariaceae). They produce conidia from discrete conidiogenous cells arranged on a swollen vesicle and they are classified in the genera *Basidiobotrys* Höhnelt, *Xylocladium* Syd. or *Masoniomyces* Crane et Dumont.

Memnoniella echinata (Riv.) Galloway, Trans. British Mycol. Soc., 18:163-166, .. 1933.

On dead petioles of *Roystonea regia*. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842343, 842355) and A. Mercado (HAC 6104).

Colonies effuse, blackish brown, pulvinate. Conidiophores dark gray with fascicles of monophialidic conidiogenous cells at the top, 60-100 μm long, 3,2-4 μm thick, phialides 7-9,5 X 3-5 μm . Conidia spherical or flattened, blackish brown, verrucose, 3,5-5,2 μm in diameter.

Common on dead plants and of a cosmopolitan distribution. Recently recorded from Cuba (Holubová-Jechová and Mercado, 1984).

Monodictys fluctuata (Tandon *et* Bilgrami) M. B. Ellis, Mycol. Pap., Kew, 124:5, 1971

On a dead branch. Playa Jibacoa, 26. III. 1981, coll. V. Holubová-Jechová (PRM).

Recently recorded from Cuba (Mercado, 1981, 1984).

Monodictys cf. lepraria (Berk.) M. B. Ellis. More dematiaceous hyphomycetes, p. 44, 1976.

On a dead branch. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová.

Conidia elongate ellipsoidal to oblong, dark brown to black, multiseptate-muriform, thick-walled, roughened to verrucose, 60-130 X 30-45 μm .

Recently reported from Cuba (Holubová-Jechová and Mercado, 1984).

**Nodulisporium* anamorph of *Hypoxyylon mediterraneum* (de Not.) J. H. Miller, Mycologia, 33:75, 1941.

On dead branches and dead wood. Valley of Río Bacunayagua, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842335) and A. Mercado (HAC 6291).

Colonies effuse, velvety ochraceous brown to rusty brown or gray brown. Mycelium partly immersed, partly superficial. Conidiophores macronematous, arising as a main axis, occasionally branched, up to 250 μm long, 3-4,5 μm wide, pale brown, towards the base darker, thick-walled and verrucose, towards the apex paler and only roughened, with verticills of conidiogenous cells below each septum. Conidiogenous cells polyblastic, sympodial, cylindrical to slightly clavate, 5-12 X 3-5 μm , hyaline to subhyaline, smooth to roughened, with the apical part subulate to nodulose, with numerous circular refractile scars. Conidia dry, obovate to oblong-ellipsoidal, aseptate, subhyaline to hyaline, smooth, 4-5 (-5,5) X 2,5-4 μm , with a flat circular basal scar.

The fungus is known principally on oak, but may also be found on almost any deciduous tree. It is widely distributed and very common in eastern and southern United States, Canada, Africa, Portugal, France, Italy, Germany, China and Tasmania. Its conidial state has been studied and illustrated by Malençon and Marion (1951, 1952), who gave it the binomial *Botrytis sylvatica* Malençon, (Jong and Rogers, 1972).

Many different species of the genera *Nodulisporium* Preuss and *Geniculosporium* Chesters *et* Greenhalgh, as anamorphs of species of *Hypoxyylon* are abundantly occurring in Cuba on dead branches or on dead wood and bark.

**Oncopodiella trigonella* (Sacc.) Rifai, Persoonia, 3:407-411, 1965.

On a dead branch. Valley of Río Bacunayagua, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842353).

The fungus is scattered on the substrate. Conidiophores unbranched, flexuous, pale brown, up to 27 μm long, 1,8-3 μm wide. Conidia acropleurogenous, sub-spherical, turbinate or pyriform, corniculate, trigonous, pale to dark brown, uni-

form, 14-18 X 12-15 μm , with 2-4 hyaline or subhyaline short horns, 2-3 μm long, basal scar on a protuberant denticle.

Known up to now probably only from Europe and British Isles (Kirk, 1983).

Periconia byssoides Pers., Synop. Meth. Fung., p. 686, 1801.

On dead rachides of *Coccothrinax* sp. Punta Seboruco, 26. III. 1981, coll. A. Mercado (HAC 6301).

A cosmopolitan species, several times recorded from Cuba.

Phaeoisaria clematidis (Fuckel) Hughes, Canadian J. Bot., 36:795, 1958.

On a dead petiole of *Roystonea regia*. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM) and A. Mercado (HAC 6101).

A common and cosmopolitan species; in Cuba it is also abundant (Holubová-Jechová and Mercado, 1986).

Phragmospathula brachyspathula Mercado, Acta Bot. Cubana, 5:2-3, 1980.

On a dead rachis of *Roystonea regia*. Loma de la Coca, 13, II. 1981, coll. A. Mercado (HAC 6063, 6088).

A common hyphomycete on rachides of *Roystonea* in Cuba.

Phragmospathula roystoneae Mercado, Acta Bot. Cubana, 5:4-5, 1980.

On dead petioles of *Roystonea regia* and undetermined palm trees. Loma Jibacoa, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842337) and A. Mercado (HAC 6290); Arroyo Bermejo, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842359); Valley of Río Bacunayagua, 26. III. 1981, coll. A. Mercado (HAC 6288).

A common hyphomycete on petioles and rachides of different palm trees, mostly of *Roystonea regia*, in Cuba.

Piricauda caribensis Mercado, Ceska Mykol., 38:111, 1984.

On dead branches of undetermined deciduous trees and dead petioles of different palm trees. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM).

Colonies dark brown, granulose. Mycelium superficial, composed of pale brown, smooth to verruculose, 2,5-3,5 μm wide hyphae. Conidiophores semimacronematous, mononematous, branched, anastomosing, 4-6,5 μm thick. Conidia solitary, spherical, subspherical or irregular, dark brown, muriform, distinctly rugose with thick walls, 19-45 X 16-35 μm , frequently with short appendages at the apical part.

The presence of tetric conidiogenesis is not quite conclusive and therefore a reclassification of this species could be possible after a detailed study.

Piricauda cochinchensis (Subram.) M. B. Ellis, More dematiaceous hyphomycetes, p. 367, 1976.

On dead petioles and rachides of undetermined palm trees. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová and A. Mercado (HAC 6093; Arroyo Bermejo, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842346, 842359).

Colonies effuse, dark brown. Mycelium superficial with micronematous conidiophores. Conidiogenous cells monotretic. Conidia muriform, pyriform to obconical, often variable in shape, dark brown, 25-75 X 15-46 μm , with 4-14-septate paler appendages, 20-90 μm long and 2,6-5,8 μm thick.

A common fungus in tropical and subtropical areas in India and in Cuba too (Holubová-Jechová and Mercado, 1986).

Pithomyces cinnamomeus Hol.-Jech., Ceska Mykol., 38:112, 1984.

On a dead branch of a broad-leaved tree. Loma de la Coca, 13. II. 1981, coll. V. Holubová (PRM).

Probably a common species in Cuba (Holubová-Jechová and Mercado, 1984, 1986).

Pseudobeltrania havanensis Hol.-Jech., Ceska Mykol., 41:34-35, 1987.

On dead leaves of *Clusia rosea*. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842729).

Colonies hypophyllous, effuse, pale olivaceous brown, hairy. Mycelium immersed. Conidiophores simple, erect, 80-380 μm long, 3-4 μm wide, pale brown to brown, septate, smooth, arising singly from a radially lobed dark brown basal cell, 10-13 μm in diameter. Conidia arising singly directly on the denticles, hyaline to pale olivaceous brown, rhombic or biconic, 14-20 X 8-9,5 (-10) μm , obtuse at the apex, with one prominent denticle 1-2 μm long below, with a thin-walled hyaline, often collapsed, band in the widest part.

Up to now, the fungus is only known from one locality (Loma de la Coca).

Pseudopetrakia kambakkamensis (Subram.) M. B. Ellis, Mycol. Pap., Kew, 125:4, 1971.

On dead branches, dead wood and bark of an undetermined tree. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842362) and A. Mercado (HAC 6105).

Colonies effuse, dark brown. Conidiophores 4-8 μm wide, rugulose. Conidia ellipsoidal, obovoid to subglobose, muriform, mid- to dark brown, rugulose to warty, 25-64 (-80) μm long, 16-42 μm wide; on the upper part bearing 1-6, subulate, sharply pointed black spines, 10-50 μm long and 4-11 μm wide at the base. It seems that the conidiogenous cells are percurrent, not determinate as described M. B. Ellis, and therefore the conidiogenesis is close to this of *Stigmina* species.

**Pseudospiropes simplex* (Kunze) M. B. Ellis, Dematiaceous hyphomycetes, p. 260, 1971.

On a dead branch of an undetermined broad-leaved tree. Loma Jibacoa, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842331).

Colonies dark brown. Conidiophores dark brown, up to 350 μm long, 4,5-6 μm thick, with dark, prominent scars in the upper part. Conidia fusiform, pale brown, 6-11 pseudoseptate, 24-42 μm long, 8-13 μm thick in the broadest part, 2-3 μm wide at the basal scar.

A common fungus on dead wood and bark in Europe, New Zealand, North America and Sierra Leone (Ellis, 1971); reported from Cuba for the first time.

Spiropes echidnodis M. B. Ellis, Mycol. Pap., Kew, 114:37, 1968.

On dead branches of an undetermined tree. Loma de la Coca, 13. II. 1981, coll. A. Mercado (HAC 6065).

Colonies effuse, dark brown. Conidiophores brown to dark brown, smooth, 50-100 μm long, 3-5,5 μm thick. Conidia ellipsoidal or clavate, pale brown to brown, 1-septate, 13-22 X 6-8,7 μm . Known on *Echidnodes* sp. (Microthyriales) on *Quercus* from USA; recently reported from Cuba (Mercado 1982b, 1984).

Sporidesmiella angustobasilaris Hol.-Jech., Ceska Mykol., 41:35, 1987.

On a dead branch of an undetermined tree. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842728).

Colonies effuse, brown. Conidiophores solitary, unbranched, straight or slightly flexuous, cylindrical, brown to dark brown, smooth with dark wall, 1-4 septate, septa nearly inconspicuous, 18-32 μm long, 4,5-6,5 μm wide, tapering to 1-1,5 μm at the truncate apex. Conidia cylindrical, up to slightly clavate or elongate ellipsoidal, 24-44 μm long, 6,5-10 μm wide, attenuated and truncate at the base, 1-1,5 μm wide at the basal scar, rounded or obtuse at the apex, brown, smooth, 3-10 distoseptate, septa mostly inconspicuous except the basal septum and 1-2 further septa which are dark; the basal cell and the septum near the base dark brown.

Up to now, the fungus has been collected only at Loma de la Coca.

Sporidesmium adscendens Berk., Ann. Nat. Hist. London, 4:291, 1840.

On dead petioles and rachides of an undetermined palm tree and on a dead trunk of *Euphorbia* sp. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842346) and A. Mercado (HAC 6093); Punta Seboruco, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842360).

Colonies effuse, blackish brown, hairy. Conidiophores brown to reddish brown, 17-50 μm long, 5-9,5 μm thick. Conidia obclaviform, midbrown to dark rusty brown, 15-45-pseudoseptate (occasionally up to 60-pseudoseptate), 90-340 μm long, 11,5-19 μm wide in the broadest part, 3,2-4 μm wide at the truncate base.

Very common species in Cuba (Mercado, 1981, 1984; Holubová-Jechová and Mercado, 1986).

Sporidesmium bambusicola M. B. Ellis, Mycol. Pap., Kew, 70:34-35, 1958.

On a dead trunk of an undetermined tree. Arroyo Bermejo, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842358).

Conidiophores brown, septate, 20-60 μm long, 4-5,5 μm thick, at the base up to 8 μm , at the apex 3-4 μm wide. Conidia obclaviform, up to 28-pseudoseptate, 80-150 μm long, 11-13,5 μm wide in the broadest part, 4-6 μm wide at the truncate base, at the apex 3-4 μm .

This species was recently reported from Cuba (Holubová-Jechová and Mercado, 1986); hitherto known from different localities in Africa (Sierra Leone, Togo, Ghana).

Sporidesmium crassispurum M. B. Ellis, Mycol. Pap., Kew, 70:29-31, 1958.

On dead branches of an undetermined tree. Valley of Río Bacunayagua, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842338) and A. Mercado (HAC 6284).

Colonies effuse, black, hairy. Conidiophores dark brown, 40-190 μm long, 8-12 μm thick. Conidia obclavate or obpyriform, dark brown, thick-walled, 12-24-septate, verrucose, 110-220 μm long, 17-29,5 μm thick in the broadest part.

This species was known up to now only from several localities in Africa (Ivory Coast, Ghana, Uganda) and from Singapore; recently it was also reported from several localities in Cuba (Mercado, 1981, 1984).

Sporidesmium flagellatum (Hughes) M. B. Ellis, Mycol. Pap., Kew, 70:54-55, 1958.

On dead branches of an undetermined tree. Loma de la Coca, 13. II. 1981, coll.

V. Holubová-Jechová (PRM).

Colonies effuse, black. Conidiophores dark brown, up to 290 μm long, 6-8 μm thick, septate, thick-walled, with several distinct proliferations. Conidia obclavate, rostrate, 5-16 $\frac{1}{2}$ septate, dark olivaceous brown, smooth, lower part occasionally slightly verrucose, 26-180 (-304) μm long, 10 μm wide 4,5-5 μm wide at the base; upper cells of conidia paler than lower cells.

Known only from Ghana and from New Zealand (Hughes, 1978), and also from Cuba (Holubová-Jechová and Mercado, 1984).

**Sporidesmium flagelliforme* Matsushima, Icones . . . lectorum, p. 137, 1975.

On a dead trunk of *Euphorbia* sp. Punta Seboruco, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842368).

Colonies effuse, dark brown. Conidiophores erect, straight, arising singly or in small groups, mid- to dark brown, septate, 30-46 μm long, 3,5-5 μm thick, at the apical scar 2,5 μm wide, with some barrel-shaped proliferations. Conidia narrowly obclavate, straight or slightly curved, straw coloured, paler brown at the lower part, subhyaline at the apical part, 14-19-pseudoseptate, 81-132 μm long, 4,8-8 μm wide, at the base 3 3,5 μm , at the apex 0,5-1,6 μm wide; septa averaging 5,5 μm apart.

Up to now, this fungus is known only from culture isolated from forest soil in Japan (Matsushima, 1975).

**Sporidesmium ghanaense* M. B. Ellis, Mycol. Pap., Kew, 70:50-51, 1958.

On a dead branch of an undetermined tree. Loma de la Coca, 13. II. 1981 coll. V. Holubová-Jechová (PRM).

Colonies effuse, dark brown. Conidiophores straight, brown septate, thick-walled, 60-120 μm long, 4-6,5 μm wide. Conidia obclavate, rostrate, at the base conico-truncate, 6-7-septate, 3-4 central cells dark brown, the basal and three distal cells paler, 32-45 μm long, 9-12 μm wide, at the apex 2-3 μm , at the basal scar 2-3 μm wide.

This species is known only from dead petioles of *Raphia* from Ghana and Sierra Leone. The Cuban collection slightly differs in size of conidia from the original description, in which the dimensions of conidia are given as 31-53 X 10-14 μm and 2,5-4,5 μm wide at the base.

Sporidesmium leptosporum (Sacc. et Roum.) Hughes, Canadian J. Bot., 36:808, 1958.

On a dead branch of an undetermined tree. Loma Jibacoa, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842331).

Colonies effuse, dark brown. Conidiophores brown to dark brown, 30-130 μm long, 3,5-6 μm thick. Conidia narrowly obclavate, pale straw coloured, 5-20-septate or pseudoseptate, 23-85 X 5-8 μm .

A cosmopolitan species on dead wood and bark and on various herbaceous material; known from Cuba from different localities (Holubová-Jechová and Mercado, 1984, 1986).

Sporidesmium parvum (Hughes) M. B. Ellis, Mycol. Pap., Kew, 70:69-70, 1958.

On dead branches. Loma de la Coca, 13. II. 1981, coll. A. Mercado (HAC 6069).

Colonies effuse, dark brown. Conidiophores dark brown, 50-120 μm long, 3-5,5 μm wide, with 1-2 lageniform proliferations. Conidia midbrown to brown, 3-4-septate, obclavate, 18-30,5 X 7-9 μm , tapering to 1,5 μm near the apex, 3,5 μm / wide at the basal scar; lower cells of the conidium darker and verrucose.

This species is known from tropical areas of Africa (Ghana, Nigeria, Sierra Leone) and was reported from Cuba too (Mercado 1981, Holubová-Jechová and Mercado, 1986).

Sporidesmium tropicale M. B. Ellis, Mycol. Pap., Kew, 70:58-60, 1958.

On dead branches. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová; Loma Jibacoa and Playa Jibacoa, 26. II. 1981, coll. V. Holubová-Jechová (PRM 842339, 842344, 842352).

A very common species in Cuba (Holubová-Jechová and Mercado, 1984, 1986); probably common in all tropical areas.

Sporidesmium vagum C. G. et T. F. L. Nees, Nova Acta Acad. Caesar. Leopold., 9:231, 1818.

On dead branches and wood of undetermined trees. Playa Jibacoa and Punta Seboruco, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842339, 842352) and A. Mercado (HAC 6302).

A common and cosmopolitan lignicolous hyphomycete, also known from Cuba (Holubová-Jechová and Mercado, 1984, 1986).

Sporoschisma nigroseptata D. et P. R. Rao, Mycopathol. Mycol. Appl., 24:82, 1924.

On a dead petiole of *Roystonea regia*. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM).

Probably a common phialidic lignicolous hyphomycete in tropical areas (Mercado, 1982b, 1984; Holubová-Jechová and Mercado, 1984, 1986).

Stephanosporium cereale (Thüm.) Swart, Trans. British Mycol. Soc., 48:459-461, 1965.

On dead culms of *Bambusa* sp. Valley of Río Bacunayagua, 26. III. 1981, coll. A. Mercado (HAC 6281).

This species is known on dead leaves and culms of *Bambusa* and *Secale* from North America, Europe, Pakistan and Philippines. It was recently reported from Cuba; a description and illustration was also published by Mercado and Castañeda (1985).

Trichobotrys effusa (Berk. et Br.) Petch, Ann. Roy. Bot. Gard. Peradeniya, 9:169, 1924.

On dead stems of *Arthrostylidium* sp. (Gramineae). Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842342) and A. Mercado (HAC 6064, 6066, 6084).

A common species in tropical areas and in Cuba too (Mercado, 1981, 1984; Castañeda, 1985).

Trimmatostroma cordae Sharma et Singh, Current Sci., 45(8):302-303, 1976.

On dead branches and wood of undetermined trees and on a dead stem of *Dendrocereus nudiflorus*. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová; Valley

of Río Bacunayagua and Punta Seboruco, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842330, 842340, 842354, 842336, 842361) and A. Mercado (HAC 6064, 6066, 6084).

Sporodochia on the substrate small, pulvinate, often confluent, effuse, black. Conidia subspherical, ellipsoidal, clavate, irregularly lobed, dark brown, with 2-4 transverse septa and a few longitudinal and oblique septa, 8-23 X 8-15 μm , in basipetal chains, irregularly branched.

The fungus is very common in all regions of Cuba and was collected also in India and Pakistan (Holubová-Jechová and Mercado, 1984, 1986).

Veronaea botryosa Cif. et Montemartini.¹ Atti Ist. Bot. Univ. Lab. Crittogam. Pavia, ser. 5, 15:68, 1958.

On a dead trunk of a palm tree., Arroyo Bermejo, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842357).

This species was recently recorded from Cuba by Mercado and Castañeda (1987) and its description was also published.

Virgaria nigra (Link) Nees, Syst. Pilze Schwämme, p. 54, 1817.

On dead branches of undetermined trees. Loma de la Coca, 13. II. 1981, coll. V. Holubová-Jechová (PRM 842350) and A. Mercado (HAC 6097).

A cosmopolitan species which is also very common in Cuba (Mercado, 1984; Holubová-Jechová and Mercado, 1984, 1986).

Zygosporium masonii Hughes, Mycol. Pap., Kew, 44:15-16, 1951.

On dead petioles of *Roystonea regia*. Arroyo Bermejo, 26. III. 1981, coll. V. Holubová-Jechová (PRM 842363) and A. Mercado (HAC 6294).

A very common fungus on dead herbaceous material in tropical and subtropical areas, and also in Cuba (Ellis, 1971; Mercado, 1981, 1984; Holubová-Jechová and Mercado, 1984).

Zygosporium oscheoides Mont., Ann. Sci. Nat., ser. 2, 77:121, 1842.

On dead petioles, rachides and part of a fruit of *Roystonea regia* and different palm trees. Loma de la Coca, Arroyo Bermejo and Valley of Río Bacunayagua, Feb. 13 and Mar. 26, 1981, coll. V. Holubová-Jechová (PRM 842349, 842363, 842364) and A. Mercado (HAC 6089, 6099, 6280, 6283, 6296, 6300).

The commonest species of *Zygosporium* on dead herbaceous material in tropical and subtropical areas, and also in Cuba (Ellis, 1971; Mercado, 1981, 1984; Holubová-Jechová and Mercado, 1984, 1986).

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RESUMEN. Se reportan 67 especies de hifomicetes, pertenecientes a 48 géneros, de las cuales 10 son nuevos registros para Cuba. El material fue colectado durante febrero y marzo de 1981 en Loma de la Coca y algunas otras localidades interesantes.