Taxonomy, nomenclature *Hypoxylon* taxa, Spegazzini

**Taxonomic and nomenclatural aspects of *Hypoxylon* taxa from Southern South America proposed by Spegazzini**

Hladki Adriana I.¹

¹Instituto de Micología, Fundación Miguel Lillo. Miguel Lillo 251, San Miguel de Tucumán (CP 4000), Tucumán, Argentina

Romero Andrea I. ²

²PRHIDEB-CONICET, Dep. de Biodiversidad y Biología Experimental, Facultad de Ciencias Exactas y Naturales (UBA), Ciudad Universitaria, Pabellón II, 4to. Piso, CP1428EHA Buenos Aires, Argentina

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Abstract

The holotypes and isotypes of twenty Hypoxylon taxa described by Spegazzini have been examined and their taxonomic positions and nomenclatural problems are discussed. Two new combinations, Annulohypoxylon apiaphynum comb. nov. and A. subeffusum comb. nov. are proposed. H. goliath is considered a synonym of Rosellinia bunodes. H. albostigmatosum and H. guarapiense are synonyms of H. anthochroum; H. anthracoderma of H. monticulosum; H. mbaiense of H. notatum; H. paulistanum of H. diatrypeoides; H. plumbeum and H. rubiginosum var. microcarpum of H. perforatum. H. porteri and H. intermedium belong in Biscogniauxia capnodes, H. puiggarii in Annulohypoxylon subeffusum, H. subvinosum in H. lenormandii, H. turbinatum var. guaraniticum in Phylacia turbinata and H. valsarioides in Creosphaeria sassafras. H. leptascum is transferred to A. leptascum, H. circostomum to Nemania circostoma and H. latissimum to N. latissima. The holotype of H. albostigmatosum has been recovered, thus the lectotypification by Shear is no longer needed. H. subnigricans and H. umbilicatum are confirmed as good taxa. H. anthochroum and H. lenormandii are reported as first records from Argentina (Tucumán).

Key words: Latin America, new combinations, Xylariaceae.

INTRODUCTION

Most work on the genus Hypoxylon Bull. from South America has been carried out and published by Spegazzini (1880, 1881, 1884, 1887, 1888 a,b, 1889, 1891, 1899, 1908 a,b, 1909, 1910, 1919, 1921, 1922) who collected and described specimens from Argentina, Bolivia, Brazil, Chile and Paraguay. He described 36 species and 2 varieties, reporting a total of 49 species from these regions.

Hladki & Romero (2006) studied 13 types described by Spegazzini from Argentina. We have now completed our revision of all Hypoxylon types described by him from the southernmost part of South America. The outcome of the taxonomic and nomenclatural revision, including synonyms and accepted basionyms, is presented here.
MATERIALS AND METHODS
Type and other collections from South America kept at BPI and LPS have been examined. Fresh collections from the Tucumán province (LIL) have been studied as well. Herbarium abbreviations follow Holmgren et al. (1990).

Microscopy preparations and observations have been performed according to Ju & Rogers (1996).

TAXONOMY
The main results of this study are summarised in Table 1, which includes also data from previous observations (Hladki 2001; Hladki & Romero 2003, 2005, 2006). The table includes a list in alphabetical order all species from the southernmost part of South America which have been described by Spegazzini, as well as the date of the first description, the origin of the sample, synonymy, most relevant references and the conclusions reached about the final taxonomic position of the taxa studied.

1 Annulohypoxylon apiahynum (Speg.) Hladki & A.I. Romero comb. nov. Mycobank MB513130


HOLOTYPE: BRAZIL, Apiahy, on decayed wood, VI-1881, J. Puiggari Nº 1655, LPS 1678!

Miller (1961) studied the isotype kept in the Shear’s herbarium and considered H. apiahynum a synonym of H. truncatum (Schwein.) J.H. Mill. At this time, the species concept for H. truncatum was considerably larger than it is today.

Ju & Rogers (1996) also examined the isotype of H. apiahynum (BPI). This collection contains only one perithecium, with remains of a disk surrounding the ostiolar papilla. They did not accept Miller’s synonymization and suggested that the taxon should be placed in the
section Annulata. The holotype is conserved at LPS and well preserved, with a clearly
developed disk around the ostiolar papilla, as is characteristic of the Section (FIGS.: 1-2).

The stroma of the holotype produced olive-brown pigments when in contact with KOH, the
spores measure 8-9 x 4-5 μm, are light brown, navicular, with tapering rounded ends and a
straight germ slit over the whole spore length. *H. truncatum* is a species widespread in the
northern hemisphere on *Quercus* sp, whereas *H. apiahynum* is collected in South America.

Thus, we do not agree with Miller’s opinion and follow Hsieh et al.’s (2005) proposal to
transfer the species to *Annulohypoxylon* Y. -M. Ju, J. D. Rogers & H. -M. Hsieh.

2 *Annulohypoxylon leptascum* (Speg.) Y.M. Ju, J.D. Rogers & H.M. Hsieh., Mycologia


HOLOTYPE: BRAZIL, São Paulo, Apiahy, on bark, 1888, *Puiggari N° 2769*, LPS
1951!

The LPS collection contains two specimens. The one numbered 2769 corresponds to the data
cited in the protologue, whereas the second one (N° 1951) has no further data. Therefore the
first (N° 2769) must be considered the holotype.

Miller (1961) considered *H. leptascum* a synonym of *H. truncatum*. Both species, however,
differ by germ slits size and shape as well as their distribution. Spores of *H. leptascum* have a
short (5-6 μm) germ slit and the species is restricted to the south hemisphere, whereas the
germ slit of *H. truncatum* ascospores is longer and the species is recorded on *Quercus* sp. in
the north hemisphere.

Ju & Rogers (1996) later decided to follow Spegazzini’s taxonomy, but we accept Hsieh et
al.’s (2005) transfer of this taxon to *Annulohypoxylon*. 
3 **Annulohypoxylon subeffusum** (Speg.) Hladki & A.I. Romero *comb. nov.*

Mycobank MB513131


HOLOTYPE: BRAZIL, São Paulo, on logs, Puiggari Nº 2341, LPS 1950!


Miller (1961) studied an isotype of *H. puiggarii* conserved in Shear’s herbarium and put this taxon in synonymy with *H. stygium* (Lév.) Sacc. Ju & Rogers (1996) later considered *H. puiggarii* and *H. subeffusum* taxonomically very close to *H. truncatum* (Schwein.) J.H. Mill., from which they differ by their smaller ascospores, their distribution in the southern hemisphere and for having *Quercus* sp., as their host. Based also on the additional material examined we propose to consider *H. puiggarii* a synonym of *H. subeffusum* and to transfer the taxon into *Annulohypoxylon* as *A. subeffusum*.


Description and illustrations. – Ju et al. (1998); Hladki & Romero (2006) (as B. capnodes).

Additional material examined. – H. intermedium Speg. Paraguay, Yaguarón, on wood, IX-1883, Balansa N° 4005, det. Spegazzini, LPS 1478.

Miller (1961), in his discussion of H. serpens (Pers.) Fr. mentioned that the Shear’s herbarium at BPI contains an “isotype” of H. porteri Speg. (Chile, 1917, N° 1967) that is composed of two distinct taxa, one of which is described by Miller as H. serpens and the other as H. divergens (Theiss.) J.H. Mill. ex Dennis. Later Ju & Rogers (1996) examined the holotype (LPS) and the isotype (BPI) and concluded that "they appear to be conspecific, although they might be from different gatherings". They (Ju et al., 1998) thus excluded H. porteri from Hypoxylon and transferred it to Biscogniauxia in B. capnodes. In fact, the holotype deposited in LPS contains one single taxon. We thus agree with Ju et al.’s (1998) concept.

We could not localize the holotype of H. intermedium, but based on LPS 1978, identified by Spegazzini, we follow Ju et al. (1998) and consider it synonymous with B. capnodes.

We have already studied this species (Hladki & Romero, 2006), when we included H. pseudopachyloma Speg. in B. capnodes. The distribution of this species can now be extended to the northern parts of Argentina.


HOLOTYPE: Chile, Valdivia, on Persea lingue, I- 1909, Spegazzini, LPS 1965!
Miller (1961) considered *H. valsarioides* a synonym of *Hypoxylon sassafras* (Schwein.) M.A. Curtis. Ju *et al.* (1993) later transferred it correctly to *Creosphaeria* as a synonym *C. sassafras*.


Additional material examined. – Argentina, Tucumán, Depto. Capital, jardín de la Fundación Miguel Lillo, 8-X-07, *Hladki 4011 LIL*.

Miller (1961) considered *H. subvinosum* a synonym of *H. investiens* (Schwein.) M.A. Curtis. Ju & Rogers (1996), however, correctly proposed to include this taxon in *H. lenormandii* because of the character combination seen in the material studied (colour of the internal layers of the stromatic tissue and of the pigments seen after KOH treatment, dehiscence of the perispore after KOH treatment, germ slit).

We could observe the *Nodulisporium* anamorphs on the surface of the material collected in Tucumán. The conidiophores are arranged in a palisade, conidiophore long, mononematous, conidiogenous cell cylindrical, terminal and hyaline, subglobose conidia. This is the first record of *H. lenormandii* in Argentina (Tucumán).

**7 Hypoxylon notatum** Berk. & M.A. Curtis, Grevillea 4: 50. (1875).

Miller (1961) studied the isotype of *H. mbaiense* deposited in NY and included it in *H. rubiginosum* (Pers.) Fr. Ju & Rogers (1996) considered it to belong in *H. notatum*, also because of the chestnut brown coloration of the granules present immediately below the stromatal surface and the pigments seen after treatment of the stroma with KOH. We agree with Ju & Rogers (1996) and believe that the same applies to *H. nectrioides* (Hladki & Romero, 2006).


HOLOTYPE: Paraguay, Guarapí, on decaying wood, 10-X-1878, *Balansa* N° 2781, LPS 1576!


Description and illustrations. – Ju & Rogers (1996)

Additional material examined. – Argentina, Tucumán, Depto. Monteros, Reserva provincial “La Florida”, 19-V-06, *Hladki* 2993, 2998, LIL.

The holotype of *H. albostigmatosum* is kept in LPS (Fig. 3: 1-4). Apparently Shear (1945) was not aware of its presence in LPS and designated Balansa 2781 (NY) as the lectotype.

Miller (1961) considered *H. anthochroum*, *H. albostigmatosum* and *H. guarapiense* as synonyms of *H. rubiginosum* (Pers.) Fr. We have also been able to examine the holotypes of *H. albostigmatosum* and *H. guarapiense* (LPS) and agree with Ju & Rogers (1996), who
accepted *H. anthochroum*, based on the colour of the internal layers of the stromatic tissue and on the pigment seen after KOH treatment and considered the other two species by Spegazzini as synonyms. The chemical composition of both holotypes has been analysed by Marc Stadler, as stated in a note inserted in the specimens. He came to the same conclusion as Ju & Rogers (1966) and ourselves.

This is the first record of *H. anthochroum* in Argentina (Tucumán).


\[
\begin{align*}
\text{HOLOTYPE} & \quad \text{Brazil, São Paulo, on branches, *Ainisitz* N° 92, LPS 1955!}
\end{align*}
\]

*H. paulistanum* has not been considered in Miller’s (1961) monograph. Ju & Rogers (1996) examined the isotype (BPI-CLS) and considered it a synonym of *H. diatrypeoides*. We could also observe in the holotype all characters typical of *H. diatrypeoides*, such as the pulvinate, erumpent stromata with conspicuous perithecial openings, the presence of orange granules under the surface of the stroma, the ostioles sunken in the stromatal surface and the large ascospores (22-23.5 x 10-12 µm) with broadly rounded ends and a dehiscent, ornamented perispore. The LPS material contains a note by Marc Stadler stating that the synonymy is confirmed also by chemical analyses.


\[
\begin{align*}
\text{HOLOTYPE} & \quad \text{Brasil, São Paulo, Apiahy, on logs, V-1888, *Puiggari* N° 2858, LPS 1952!}
\end{align*}
\]


Miller (1961) did not consider this species and Ju & Rogers (1996) accepted it but pointed out that the isotype (BPI) was in poor conditions. The LPS material, however, is very well
preserved and all important characters can be observed. The spores are very large (38-40 x 20-22 μm), brown to blackish or black, with a straight, central, short germ slit and a perispore not dehiscent in KOH; stroma with pigments dark olivaceous brown dissolved in 10% KOH.

FIGS.: 52-55


HOLOTYPE: Paraguay, Guarapí, on dead branches, IX-1883, Balansa N° 3996, LPS 1677!

Miller (1961) considered H. anthracoderma a synonym of H. investiens (Schwein.) M.A. Curtis. Ju & Rogers (1996) suggested to include it in H. monticulosum because of the microscopic characters they observed in the isotype deposited in BPI. We agree with the latter, because the type specimen (LPS) does not produce any pigments in KOH and the stromatal surface in mature collections is blackish. In our opinion, these two characters are very important to differentiate closely related species, as already discussed by Ju & Rogers (1996).

FIGS.: 56-59

HOLOTYPE: Paraguay, Guarapí, on branches, XI-1881, Balansa N° 3424, LPS 1942!


Stromata applanate to pulvinate, with conspicuous perithecia, 30 x 15 x 0.5 mm; stromatal surface vinaceous blackish to blackish with orange brown granules in the surface depressions and black granules beneath the surface and among the perithecia, subperithecial tissue dark brown, 0.6-0.8 mm thick; no pigments dissolved in 10% KOH. Perithecia obovoidal to
tubular 0.4-0.6 x 0.1-0.3 mm. Ostiolar papilla prominent, conical. *Asci* not observed.

*Ascospores* brown to dark brown, ellipsoidal, inaequilateral to navicular with narrowly rounded ends, 9-13 x 5-6.5 μm, with a short, straight germ slit on the convex side, perispore not dehiscent in 10% KOH, epispore smooth.

Miller (1961) did not mention *H. subnigricans*. Ju & Rogers (1996) examined a microscopic preparation of the isotype and suggested to put it into synonymy with *H. monticulosum*. *H. subnigricans*, however, has larger ascospores (9-13 x 5-6.5 vs 7-11 x 3.5-4.5 μm) than *H. monticulosum*, with a straight germ slit over the whole ascospore length. We do not believe thus that it would be justified to merge the two species.

**13** *Nemania latissima* (Speg.) Y.M. Ju & J.D. Rogers, Nova Hedwigia 74 (1-2): 100.

(2002). FIGS.: 60-64


Description and illustrations. – Ju & Rogers (2002)


Miller (1961) considered Spegazzini’s species a synonym of *H. rubigineoareolatum* Rehm, but later Ju & Rogers (2002) transferred the taxon to *Nemania latissima*, a fungus characterized by the presence of a brown-reddish subiculum covering the margins of the stroma, by conical, black, prominent ostiolar papillae, ascospores that are darker and larger (14.5-26 x 8-10.5 vs 12-14.5 x 5-6.5 μm) than those of *H. rubigineoareolatum*, a perispore that is indehiscent in KOH and a short, straight germ slit slightly oblique on the convex side of the spore. We have been able to see all these characters in both holotypes. In both we could
not observe the liberation of any pigments after KOH treatment of the stroma. Thus, we confirm Ju & Rogers’ (2002) decision that *N. latissima* is a good species.


**HOLOTYPE:** Chile, Valparaíso, Los Perales, on rotten wood, 1918, *Spegazzini*, LPS 1966!

*Description and illustrations.* – Ju & Rogers (2002), as *N. circostoma*.

Miller (1961) did not mention *H. circostomum* and Ju & Rogers (1996) excluded this taxon from *Hypoxylon*, pointing out its similarity with *Nemania bipapillata* (Berk. & M.A. Curtis) Pouzar. Later (Ju & Rogers 2002) they formally transferred it to *Nemania* as *N. circostoma* and described it as similar to *N. bipapillata* and *N. immersidiscus* Van der Gucht, Y.M. Ju & J.D. Rogers. We have examined the holotype of the species and fully support the taxonomy proposed by Ju & Rogers (2002).

15 **Phylacia turbinata** (Berk.) Dennis, Kew Bull.: 297-332. (1957).


**HOLOTYPE:** Paraguay, Guarapí, on *Citrus aurantium*, 1879, *Balansa Nº 3417*, LPS 1944!

*Additional material examined.* – Brazil. Florianópolis, I-2001, on wood remains, A.I. Hladki 2392 LIL.
Dennis (1957) in his study of the tropical American Xylariales mentioned *H. turbinatum* var. *guaraniticum* as a synonym of *P. turbinata*. We confirm this decision after having studied the holotype.

16 **Hypoxylon perforatum** (Schwein.) Fr., Summa Veg. Scand., Section Post.

(Stockholm): 384. (1849).

\[= Hypoxylon plumbeum \]


\[= Hypoxylon rubiginosum \]


Miller (1961) examined the "isotype" present in the Shear’s herbarium and concluded that *H. plumbeum* is a synonym of *H. investiens* (Schwein.) M.A. Curtis. Ju & Rogers (1996) included it in *H. perforatum*. We have studied the holotype and observed that this fungus produces a yellowish-green pigment after treatment with KOH. This supports Ju & Rogers (1996) conclusions. Marc Stadler also analysed the material and the results of his chemical analysis support the synonymy proposed by Ju & Rogers (1996).

Miller (1961) did not study *Hypoxylon rubiginosum* (Pers.) Fr. var. *microcarpum*, a variety erected by Spezzazzini, but Ju & Rogers (1996) suggested to consider it a synonym of *H. perforatum*; this is supported by the chemical analyses by Marc Stadler. Overall, we believe that this decision can be fully approved, even if the material we have seen in LPS is immature.


HOLOTYPE: Brasil, São Paulo, Apiahy, on rotten logs, VII-1888, Puiggari, LPS 1137!

Description and illustrations. –San Martin & Rogers (1995), as Rosellinia bunodes.

Höhnel (1907) transferred H. goliath to Rosellinia. Ju & Rogers (1996) suggested that this could be a synonym of R. bunodes. Our studies of the holotype confirm this hypothesis, because we observed stromata with an ornamented surface, and cylindrical, evanescent large asci, containing 8 biseriate ascospores with long tapering, almost filiform ends typical of R. bunodes.

ACKNOWLEDGMENTS

We thank the directors of the herbaria LIL, BPI and LPS for kindly providing us the material for investigation. Mrs. Inés Jaume (graphical department of FML) provided the ink drawings. Thanks also go to Drs. Orlando and Liliane E. Petrini (Switzerland) for critically revising the manuscript.

LITERATURE CITED


FIGURES

Figs. 1-4. *Annulohypoxylon apiyahnum* (Speg.) Hladki & A.I. Romero, from holotype of *H. apiyahnum* Speg., LPS 1678. 1. Stromata. 2. Detail of the stromatal surface, with the disk surrounding the ostiolar papilla. 3. Longitudinal section of a stroma across a perithecium. 4. Ascospores. 5-8. *Annulohypoxylon leptascum* (Speg.) Y.M. Ju & J.D. Rogers, from holotype of *H. leptascum* Speg., LPS 1951. 5. Stromata. 6. Detail of the stromatal surface, with a disk surrounding the ostiolar papilla. 6b. Detail of stroma with prominent, conical ostiolar papilla. 7. Longitudinal section of a stroma. 8. Ascospores. 9-16 *Annulohypoxylon subeffusum* (Speg.) Hladki & A.I. Romero, from holotype *H. puiggarii* Speg., LPS 1950. 9. Stromata. 10a. Detail of stromatal surface, with the light brown disk surrounding the ostiolar papilla. 10b. Lateral view of stroma with well delimited perithecial structures... alargar la escala, un rectángulo de 15 mm corresponde a 1 mm. 11. Longitudinal section of stromata. 12. Ascospores. 13-16. From holotype of *H. subeffusum* Speg., LPS 1939. 13. Stromata; 14a. Detail of the stromatal surface, with light brown to dark brown ostiolar disks. 14b. Lateral view of the stroma. 15. Longitudinal section of a stroma. 16. Ascospores, some with perispore dehiscent in KOH. Bars: 1-3, 6a, 6b, 7, 10a, 10b-11, 14b, 15 = 1 mm; 14a = 2,5 mm; 4, 8, 16 = 10 µm; 12 = 5 µm; 5, 9, 13 = 10 mm.

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Figs. 34-42. Hypoxylon anthochroum Berk. & Broome, from holotype of H. albostigmatosum Speg., LPS 1576. 34. Effuse stroma. 35. Detail of the stromatal surface; arrow shows ostioles sunken in the stromatal surface. 36. Lateral view of stroma with well defined perithecial structures. 37. Longitudinal section of stroma. 38. Ascospores. From holotype of H. guarapiense Speg., LPS 1946. 39. Stroma. 40. Detail of stromatal surface with black, umbilicate ostioles (arrow) sunken in the stromatal surface. 41. Stromatal surface with cracks (arrow) and without conspicuous perithecial structures. 42. Ascospores with germ slit on their convex side. 43-46. Hypoxylon diatypoeoides Rehm., from holotype of H. paulistanum Speg., LPS 1955. 43. Pulvinate, erumpent stromata. 44. Detail of stromata with umbilicate ostioles (arrow shows one) and conspicuous perithecial structures. 45. Longitudinal section of stroma. 46. Ascospores, one with perispore dehiscent in KOH (left). 47-51. Hypoxylon umbilicatum
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Hypoxylon monticulosum Mont., from holotype of H. anthracoderma Speg., LPS 1677. 52. Pulvinate stroma. 53. Details of stromatal surface. 54. Longitudinal section of stroma, with spherical to obovoid perithecia. 55. Ascospores, some with perispore dehiscent in KOH and slightly sigmoid germ slit. 56-59 Hypoxylon subnigricans Spec., LPS 1942. 56. Effuse stroma. 57. Details of pruinose, stromatal surface with conspicuous perithecial structures. 58. Longitudinal section of stroma. 59. Ascospores. 60-64 Nemania latissima (Spec.) Y.M. Ju & J.D. Rogers, from holotype of H. latissimum Spec., LPS 1954. 60. Effused-pulvinate stroma. 61. Details of stromatal surface with prominent ostiolar papilla (arrow); 62. Details of basal subiculum (arrow) covering the margins of the stroma. 63. Longitudinal section of stroma with stromatic tissue beneath the surface. 64. Ascospores. 65-67 Phylacia turbinata (Berk.) Dennis, from holotype of H. turbinatum Berk. var. guaraniticum Spec., LPS 1944. 65. Cleistothecial stroma. 66. Longitudinal section of stroma. 67. Ascospores. 68-71 Hypoxylon perforatum (Schwein.) Fr., from holotype of H. plumbeum Spec., LPS 1949. 68. Effuse, pulvinate stroma. 69. Detail of stroma with conspicuous perithecial structures. 70. Longitudinal section of stroma. 71. Ascospores, one with dehiscent, coil-like ornamentation perispore. 72-74 Rosellinia bunodes (Berk. & Broome) Sacc., from holotype of Hypoxylon goliath Spec., LPS 1137. 72. Stroma with abundant basal subiculum. 73. Details of stromatal surface with ostioles surrounded by a ring. 74. Ascospores with broadly acute ends. Bars: 52, 60, = 10 mm; 56, 61, 62, 65, 66, 68, 72 = 5 mm; 73 = 3 mm ; 53, 54, 57, 58, 63, 69, 70 = 1 mm; 55, 59, 64, 67, 71, 74 = 10 μm.

e-mail address of the corresponding author: romero@bg.fcen.uba.ar
TABLE 1. Revision of *Hypoxylon* Bull. type species described by Spegazzini for South America.

<table>
<thead>
<tr>
<th>Spegazzini’s denomination</th>
<th>LPS Accession number</th>
<th>Year of description</th>
<th>Accepted taxon</th>
<th>Other names</th>
<th>Reference Material examined</th>
</tr>
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<tbody>
<tr>
<td><em>Hypoxylon albostigmatosum</em></td>
<td>LPS 1576</td>
<td>1884</td>
<td><em>Hypoxylon anthochroum</em></td>
<td><em>H. rubiginosum</em> (Pers.) Fr.</td>
<td>Miller (1961) Isolotype (NY)</td>
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<td></td>
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<td>Paraguay</td>
<td></td>
<td><em>H. anthochroum</em> Berk. &amp; Broome</td>
<td>Ju &amp; Rogers (1996) Isotype (BPI) Isolotype (NY)</td>
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<td><em>Hypoxylon anthracoderma</em></td>
<td>LPS 1677</td>
<td>1888</td>
<td><em>Hypoxylon monticulosum</em></td>
<td><em>H. investiens</em> (Schwein.) M.A. Curtis</td>
<td>Miller (1961) Isotype herb. Shear (K)</td>
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<td></td>
<td>Brazil</td>
<td></td>
<td>Incertae sedis</td>
<td>Ju &amp; Rogers (1996) Isotype (BPI)</td>
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<td>LPS 1966</td>
<td>1921</td>
<td><em>Nemania circostoma</em></td>
<td><em>Nemania circostoma</em> (Schwein.)</td>
<td>Ju &amp; Rogers (2002) Holotype (LPS) Isotype (BPI)</td>
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<td>Y.M. Ju &amp; J.D. Rogers</td>
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<td>Brazil</td>
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<td>Ju &amp; Rogers (1996) Isotype (BPI), (NY)</td>
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<td>1884</td>
<td><em>Hypoxylon anthochroum</em></td>
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<td>Miller (1961) Isotype (NY)</td>
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<td>Paraguay</td>
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<td><em>H. anthochroum</em> Berk. &amp; Broome</td>
<td>Ju &amp; Rogers (1996) Isotype (BPI), (NY)</td>
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<td>LPS 1948</td>
<td>1884</td>
<td><em>Biscogniauxia capnodes</em></td>
<td><em>Biscogniauxia capnodes</em> (Berk.)</td>
<td>Ju et al. (1998) Y.M. Ju &amp; J.D. Rogers</td>
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<td>Hypoxylon latissimum</td>
<td>LPS 1954</td>
<td>1884 Paraguay</td>
<td><em>Nemania latissima</em></td>
<td><em>H. rubigineoareolatum</em> Rehm</td>
<td>Miller (1961) Isotype (K)</td>
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<td><em>Nemania latissima</em> (Speg.) Y.M. Ju &amp; J.D. Rogers</td>
<td>Ju &amp; Rogers (2002) Holotype (LPS) Isotype (BPI)</td>
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<td>Hypoxylon leptascum</td>
<td>LPS 1951</td>
<td>1889 Brazil</td>
<td><em>Annulohypoxylon leptascum</em></td>
<td><em>H. truncatum</em> (Schwein.) J.H. Mill.</td>
<td>Miller (1961) Isotype (K)</td>
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<td><em>Annulohypoxylon leptascum</em> (Speg.) Y.M. Ju, J.D. Rogers &amp; H.M. Hsieh</td>
<td>Hsieh et al. (2005) Isotype (BPI)</td>
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<td>Hypoxylon mbaiaense</td>
<td>LPS 1945</td>
<td>1884 Paraguay</td>
<td><em>Hypoxylon notatum</em></td>
<td><em>H. rubiginosum</em> (Pers.) Fr.</td>
<td>Miller (1961) Isotype (NY)</td>
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<td><em>H. notatum</em> Berk. &amp; M.A. Curtis</td>
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<td>Hypoxylon paulistanum</td>
<td>LPS 1955</td>
<td>1908a Brazil</td>
<td><em>Hypoxylon diatrypeoides</em></td>
<td><em>H. diatrypeoides</em> Rehm</td>
<td>Ju &amp; Rogers (1996) Isotype (BPI-CLS)</td>
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<td>Hypoxylon plumbeum</td>
<td>LPS 1949</td>
<td>1884 Paraguay</td>
<td><em>Hypoxylon perforatum</em></td>
<td><em>H. investiens</em> (Schwein.) M.A. Curtis</td>
<td>Miller (1961) Isotype herb. Shear</td>
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<td>Ju &amp; Rogers (1996) Isotype (BPI)</td>
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<td><em>Biscogniauxia capnodes</em> (Berk.) Y.M. Ju &amp; J.D. Rogers</td>
<td>Ju et al. (1998) Holotype (LPS) Isotype (BPI)</td>
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<td>Hypoxylon puiggarii</td>
<td>1889 Brazil</td>
<td>Annulohypoxylon subeffusum comb. nov.</td>
<td>H. stygium (Lév.) Sacc.</td>
<td>Miller (1961), Isotype herb. Shear</td>
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<td>Hypoxylon rubiginosum var.</td>
<td>1907 Argentina</td>
<td>Hypoxylon perforatum</td>
<td>H. perforatum (Schwein.) Fr.</td>
<td>Ju &amp; Rogers (1996)</td>
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<td>microcarpum</td>
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<td>Hypoxylon subeffusum</td>
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<td>LPS 1939</td>
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<td>Hypoxylon subvinosum</td>
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<td>Hypoxylon lenormandii</td>
<td>H. investiens (Schwein.) M.A. Curtis</td>
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<td>LPS 1943</td>
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<td>H. lenormandii Berk. &amp; M.A. Curtis</td>
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<td>Hypoxylon turbinatum var.</td>
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<td>Phylacia turbinata</td>
<td>Phylacia turbinata (Berk.) Dennis</td>
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<td>guaraniticum</td>
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<td>H. umbilicatum</td>
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<td>Hypoxylon valsarioides</td>
<td>1910 Chile</td>
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<td>H. sassafras (Schwein.) M.A. Curtis</td>
<td>Miller (1961)</td>
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<td>LPS 1965</td>
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<td>Creosphaeria sassafras (Schwein.) Y.M. Ju, F. San Martin &amp; J.D. Rogers</td>
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