

# MYCOTAXON

Volume LIII, pp. 377-389

January-March 1995

## WOOD-DECAY BASIDIOMYCETES FROM THE STATE OF BOLIVAR IN SOUTHEASTERN VENEZUELA

Carmen Rodriguez, Visiting Scientist  
Harold H. Burdsall, Jr., Supervisory Botanist  
Thomas J. Volk, Post-doctorate Fellow

Center for Forest Mycology Research  
USDA Forest Service  
Forest Products Laboratory  
One Gifford Pinchot Drive  
Madison, WI 53705-2398

### SUMMARY

This report summarizes information on wood-decay fungi from the Lote Boscoso San Pedro in the state of Bolivar in southeastern Venezuela. Forty-four species are reported, including 12 new to the Venezuelan rainforest: *Lentinus scleropus*, *Megasporoporia setulosa*, *Postia floriformis*, *Phellinus durissimus*, *P. pectinatus*, *P. rhababarinus*, *P. robustus*, *Pleurotus flavolanatus*, *P. ostreatus*, *Trametes cervina*, *Tyromyces hydrophilus*, and *Rigidoporus umbonatis*. Information is presented on substrate/host relationships, type of rot produced, and geographic distribution for each species.

### RESUMEN

Este reporte se resume información acerca de hongos descomponedores de madera del Lote Boscoso, San Pedro en el Estado Bolívar, ubicado al sur-este de Venezuela. Se reportan cuarenta y cuatro especies, incluyendo 12 nuevas del bosque tropical Venezolano: *Lentinus scleropus*, *Megasporoporia setulosa*, *Postia floriformis*, *Phellinus durissimus*, *P. pectinatus*, *P. rhababarinus*, *P. robustus*, *Pleurotus flavolanatus*, *P. ostreatus*, *Trametes cervina*, *Tyromyces hydrophilus*, y *Rigidoporus umbonatis*. Se presenta información en relación a la interacción sustrato/hospedero, tipo de pudrición producida y la distribución geográfica de cada especie.

### INTRODUCTION

The Lote Boscoso San Pedro is located in the Piar and Rocio districts of Bolivar State, 7°00'30" N and 62°29'30" W, in southeastern Venezuela. The area covers about 750,000 ha and ranges from tropical dry forest to premontane rain forest. The vegetation is very dense with a few widely scattered savannas, thickets, and open forests. The important tree species are *Mora gonggrijpii* (Kleinh.) Sandw. (mora), *Cordia alliodora* (R. & P.) Cham. (pardillo), *Hymenea courbaril* L. (algarrobo), *Peltogyne porphyrocardia* Griesb. (zapatero), *Piranhea longepedunculata* Jablonsky (caramacate), and *Erisma uncinatum* Warm. (mureillo) (Rodríguez, 1992).

Venezuelan Polyporaceae have been described in the literature (Patouillard & Gaillard, 1888; Patouillard, 1889a,b, 1891, 1927; Sydow, 1930; Overholts, 1934; Chardon & Toro, 1934; Wolf, 1949; Dennis, 1965; Fidalgo & Fidalgo, 1967, 1968; Fidalgo, 1968a; Dennis, 1970; Holmquist, 1972; Setliff, 1984; Rogerson *et al.*, 1990).

#### DESCRIPTION OF SPECIES

Forty-four wood-decay species were collected from October 1989 to November 1991; 12 of these are new to Venezuela. A host/substrate index for the Venezuelan collections is shown in Table 1. The taxa are members of the Polyporaceae, Hymenochaetaceae, and Thelephoraceae. Species are listed in alphabetical order; those preceded by an asterisk (\*) are new records for Venezuela. All collections have voucher specimens deposited at the Center for Forest Mycology Research (CFMR). Those collections preceded by two asterisks (\*\*) have cultures deposited at the CFMR. The first statement under substrate or distribution was derived from data from our study. The remaining information on distribution and substrate preferences from South and Central America was obtained from other authors.

*Antrodia albida* (Fr.) Donk., Persoonia 4: 339, 1966.

SPECIMEN NUMBER: \*\*CR-20.

TYPE OF ROT: Brown rot.

SUBSTRATE: On trunks of *Diploptropis purpurea* (Rich.) Amsh. (congrío); on various hardwoods; more rarely on gymnosperms; common on dead branches of *Juniperus* sp., but present on posts and structural wood (Murrill, 1915; Overholts, 1953; Gilbertson & Ryvarden, 1986); on railroad sleepers (Cunningham, 1965); common on Eleocarpaceae, Myrsinaceae, Oleaceae, Pinaceae, Pittosporaceae, Rosaceae, Rubiaceae, and Strophulariaceae (Cunningham, 1965); on *Eucalyptus* sp. in Brazil (Rick, 1960); on dead liana (Fidalgo, 1968).

DISTRIBUTION: Common in Venezuela. Widespread, reported as a resupinate fungus near *Trametes sepium* (Dennis, 1970).

*Auricularia polytricha* (Mont.) Sacc., Att. Ist. Vaneto. Sci. 3: 722, 1885.

SPECIMEN NUMBER: \*\*CR-03, \*\*CR-70.

TYPE OF ROT: White rot.

SUBSTRATE: On trunk of congrío; common on dead hardwood.

DISTRIBUTION: Common in Venezuela on dead and rotting hardwood. Widely collected in Venezuela in Amazonas and Bolívar state (Rogerson *et al.*, 1990). Common in tropical America (Duncan, 1972; Lowy, 1952). Common in the tropical areas (Fidalgo, 1968).

*Coriopsis caperata* (Berk.) Murr., N. Amer. Fl. 9(2): 77, 1908.

SPECIMEN NUMBER: CR-113, \*\*CR-77, \*\*CR-56.

TYPE OF ROT: White rot.

SUBSTRATE: On branches of unidentified hardwood; on angiosperms of all kinds (Ryvarden & Johansen, 1980).

DISTRIBUTION: Widespread in Venezuela. In San Fernando de Apure, el Limón, and Carabobo, Táchira, Yaracuy, and Miranda states (Fidalgo, 1968). In Amazonas, Bolívar and Monagas states (Rogerson *et al.*, 1990). *C. caperata*, known from tropical regions, is particularly common in South America, Central America, and West Indies (Fidalgo & Fidalgo, 1968). Widespread in tropical America (Ryvarden & Johansen, 1980).

*Cyclomyces iodinus* (Mont.) Pat., Essai Taxon. Hymenom. p. 98, 1900.

SPECIMEN NUMBER: \*\*CR-100, \*\*CR-1, \*\*CR-7.

TYPE OF ROT: White rot.

SUBSTRATE: On branches of dead hardwood; on rotting dead hardwood (Saccardo, 1888; Murrill 1915); common on bark and branches on the ground (Overholts 1953).

DISTRIBUTION: Common in Venezuela. Bolivar state (Rogerson *et al.*, 1990).

Venezuela and Cuba (Saccardo, 1888). Trinidad, Venezuela, and Ecuador as *Polyporus iodinus* (Dennis, 1970). Tropical species (Overholts, 1953; Cunningham, 1965).

*Dacryopinax indacocheae* Lowy, Mycologia 51: 848, 1959.

SPECIMEN NUMBER: \*\*CR-72.

TYPE OF ROT: Brown rot.

SUBSTRATE: On unidentified branch on soil.

DISTRIBUTION: In Bolivar State (Rogerson *et al.*, 1990). In Bolivia and Brazil (Lowy, 1971).

*Dacryopinax spathularia* (Schw.) Martin, Lloydia 11: 116, 1948.

SPECIMEN NUMBER: \*\*CR-54.

TYPE OF ROT: Brown rot.

SUBSTRATE: On unidentified branches; on gymnosperm and angiosperm wood (McNabb, 1965); branches of different species of hardwood (Dennis, 1970; Saccardo, 1888).

DISTRIBUTION: In Miranda state (Chardon & Toro, 1934). Venezuela, Trinidad, British Guiana, Colombia, and Panama (Dennis, 1970). Widely collected in Amazonas and Bolivar state (Rogerson *et al.*, 1990). Cuba, Central America, Brazil, India, and Ceylon (Saccardo, 1888). South America (Farr *et al.*, 1989).

*Earliella scabrosa* (Pers.) Gilbn. & Ryv., Mycotaxon 22: 364, 1985.

SPECIMEN NUMBER: \*\*CR-85, \*\*CR-68, \*\*CR-80, \*\*CR-46, \*\*CR-95, \*\*CR-45, \*\*CR-103.

TYPE OF ROT: White rot.

SUBSTRATE: On trunk of *Jacaranda capaia* D. Don. (simaruba) and logs of algarrobo; common on dead hardwood; on *Terminalia obovata* Eichl., *Hernandia sonora* Linn., *Persea americana* P. miller., *Artocarpus communis* Frost., *Sterculia caribaea* R. Br., and *Theobroma cacao* L. (Fidalgo & Fidalgo, 1968).

DISTRIBUTION: In Carabobo state (Chardon & Toro, 1934). Aragua state (Wolf, 1949); Miranda state (Dennis, 1970), and Barinas state (Holmquist, 1972). Widely collected as *Earliella corrugata* in Bolivar and Amazonas states (Rogerson *et al.*, 1990). Known in tropical regions worldwide (Fidalgo & Fidalgo, 1968). Pantropical (Ryvarden & Johansen, 1980).

*Fomitopsis feei* (Fr.) Kreisel, Univ. Habana. ser. 4, Cienc. Biol. 16: 83, 1971.

SPECIMEN NUMBER: \*\*CR-76, \*\*CR-86.

TYPE OF ROT: Associated with brown cubical rot of dead hardwood.

SUBSTRATE: On branch of unidentified hardwood; on *Piptadenia rigida* Benth., *Lonchocarpus* sp., *Acacia melanoxylon* R. Br., *Eucalyptus gumifera* (Gaertner) Hochr., (Carranza-Morse & Gilbertson, 1986).

DISTRIBUTION: In Venezuela, Calabozo and Orituce River; North, Central, and South America; Caribbean Islands (Carranza-Morse & Gilbertson, 1986).

*Gloeophyllum striatum* (Sw.:Fr.) Murr., Bull. Torrey Bot. Club. 32: 370, 1905.

SPECIMEN NUMBER: \*\*CR-04, \*\*CR-126.

TYPE OF ROT: Brown rot.

SUBSTRATE: On trunk of dead congrio and branches of *Pinus caribaea* var. *hondurensis* Horelet; common on dead conifers and hardwoods (Overholts, 1953).

DISTRIBUTION: Common in Venezuela; American tropics (Fidalgo, 1968).

*Hexagonia hydroides* (Fr.:Sw.) Fidalgo, M., Mem. New York Bot. Gard. 17 (2): 35, 1968.

SPECIMEN NUMBER: \*\*CR-22.

TYPE OF ROT: White rot.

SUBSTRATE: On dead wood such as dead branches of living trees, old stumps, railway ties, fenceposts (Fidalgo, 1968b); on treated and untreated wood (Carranza-Morse, 1992); on dead wood of *Acacia* sp. (Patouillard & Hein, 1928).

DISTRIBUTION: Widespread in Venezuela. Amazonas and Bolivar, Gúarico, Miranda, Monagas, and Sucre states (Fidalgo, 1968). Widespread in Amazonas and Bolivar state (Rogerson *et al.*, 1990). Common in American tropics, Central America, West Indies, and South America (Fidalgo, 1968). Semidry areas and savannas (Gilbertson & Ryvardeen, 1986). COMMENTS: *Hexagonia hydroides* is sometimes a pathogen, on living *Ficus retusa* L. in Brazil and on *Tamarindus indica* L. in Virgin Islands (Fidalgo, 1968).

*Hymenochaete luteo-badia* (Fr.) V. Höhn. & Litsch., K., Akad. Wiss. Wein Sitzungs. Ber. 116: 754, 1907.

SPECIMEN NUMBER: \*\*CR-29.

TYPE OF ROT: Brown rot.

SUBSTRATE: On unidentified hardwood branches; common on decomposing or rotting dead hardwood (Burt, 1966).

DISTRIBUTION: Trinidad, British Guiana, and Venezuela (Dennis, 1970). Amazonas and Bolivar states (Rogerson *et al.*, 1990). Venezuela, Dutch Guiana, and Trinidad (Burt, 1918). Guadalupe, Puerto Rico, British Honduras, and British Guiana (Fidalgo, 1968). Galapagos Islands, Ecuador (Reid *et al.*, 1981).

\* *Lentinus scleropus* (Pers.) Fr., Syn. Gen. Lent. 10, 1836.

SPECIMEN NUMBER: \*\*CR-113.

TYPE OF ROT: Brown rot.

SUBSTRATE: On log of algarrobo.

DISTRIBUTION: In Mexico, Nicaragua, Cuba, Dominica, Brazil and Paraguay (Pegler, 1983). Tropical species (Corner, 1981).

\* *Megasporoporia setulosa* (Henn.) Rajch., Mycotaxon 16: 180, 1982.

SPECIMEN NUMBER: \*\*CR-79.

TYPE OF ROT: White rot.

SUBSTRATE: On branch of unidentified wood; on angiosperms (Ryvardeen *et al.*, 1982).

DISTRIBUTION: Pantropical (Ryvardeen *et al.*, 1982).

- Microporellus obovatus* (Jungh.) Ryv., Norw. J. Bot. 19 (3-4): 232, 1972.  
 SPECIMEN NUMBER: CR-65.  
 TYPE OF ROT: White rot.  
 SUBSTRATE Unidentified trunk on soil; on dead hardwoods, rarely on conifers (Gilbertson & Ryvarden, 1987).  
 DISTRIBUTION: Venezuela (Patouillard & Gaillard, 1888; Chardon & Toro, 1934; Dennis, 1970). *Petaloides mutabilis* in Venezuela (Fidalgo, 1968).
- Nigroporus durus* (Jungh.) Murr., Bull. Torrey Bot. Cl. 34: 471, 1907.  
 SPECIMEN NUMBER: \*\*CR-02.  
 TYPE OF ROT: White rot.  
 SUBSTRATE: On unidentified hardwood.  
 DISTRIBUTION: Pantropical species (Ryvarden & Johansen, 1980).
- Nothopanus hygropanus* (Mont.) Singer in Pegler, Kew Bull. 23: 247, 1969.  
 SPECIMEN NUMBER: \*\*CR-28.  
 TYPE OF ROT: Brown rot.  
 SUBSTRATE: On branch of caramacate.  
 DISTRIBUTION: Pantropical, in Venezuela and Brazil (Corner, 1981). French Guiana (Pegler, 1983). Trinidad (Dennis, 1970).
- Panus strigellus* Berk. in Berk. & Curtis, Jour. Linn. Soc. 10: 302, 1868.  
 SPECIMEN NUMBER: CR-115.  
 TYPE OF ROT: White rot?  
 SUBSTRATE: On log of algarrobo.  
 DISTRIBUTION: Venezuela, Mexico, Salvador, Cuba, Guadalupe, Martinique, Brazil, Paraguay, Colombia, Peru, and Argentina (Pegler, 1983). Brazil (Saccardo, 1887).
- \**Phellinus durissimus* (Lloyd) Roy., Mycologia, 71: 1006, 1979.  
 SPECIMEN NUMBER: \*\*CR-30, \*\*CR-45.  
 TYPE OF ROT: White rot.  
 SUBSTRATE: On living stem of caramacate and stump of *Carapa guianensis* Aubl. (carapa), on *Swietenia mahogani* Jacq., *Casuarina equisetifolia* L., *Mimusops elengi* L. (Larsen & Cobb-Pouille, 1990).  
 DISTRIBUTION: In eastern American and African tropics (Larsen & Cobb-Pouille, 1990).
- Phellinus fastuosus* (Lév.) Ryv., Norw. J. Bot. 19: 234, 1972.  
 SPECIMEN NUMBER: CR-13.  
 TYPE OF ROT: White rot.  
 SUBSTRATE: On stem of caramacate in living tree; on hardwood trees (Carranza-Morse, 1992); on dead hardwood in many genera (Larsen & Cobb-Pouille, 1990); on bark or decorticated wood of dead fallen branches and trunks, *Dillenia*, *Eubothrium* (Cunningham, 1965); on dead hardwood in many genera (Gilbertson & Ryvarden, 1987).  
 DISTRIBUTION: *Fomes fastuosus* in Venezuela (Dennis, 1970). *Fulvifomes fastuosus* (Holmquist, 1972). Widespread in tropics (Larsen & Cobb-Pouille, 1990).

*Phellinus gilvus* (Schw.) Pat., Essai Taxon. Hymenom. 97, 1900.

SPECIMEN NUMBER: CR-12, CR-94.

TYPE OF ROT: White rot.

SUBSTRATE: On Leguminosae, *Libidiba coriaria* (Jacq.) Schltldl. (dividive), and Euphorbiaceae, *Euphorbia* sp., *Sapiuin* sp. (Fidalgo & Fidalgo, 1968); on dead tree trunks (Fidalgo, 1968).

DISTRIBUTION: Amazonas and Bolivar states, widely distributed (Rogerson *et al.*, 1990). San Fernando de Atabapo in Amazonas state, Guatopo in Miranda state, and El Limon in Aragua state (Fidalgo, 1968). Trinidad, British Guiana, Venezuela, and Colombia (Dennis, 1970).

\**Phellinus pectinatus* (Kl.) Quél., Enrich. Fung. P. 173, 1886.

SPECIMEN NUMBER: CR-42.

TYPE OF ROT: White rot.

SUBSTRATE: On stem of caramacate; on hardwood trees (Carranza-Morse, 1992); on deciduous wood (Larsen & Cobb-Pouille, 1990).

DISTRIBUTION: Pantropical (Ryvarden & Johansen, 1980). Java and Cuba (Larsen Cobb-Pouille, 1990). Central and South America, Africa, and Caribbean islands (Carranza-Morse, 1992). Panama (Dennis, 1970).

\**Phellinus rhababarinus* (Berk.) Cunn., New Zeal. and Dep. Sci. Ind. Res. Bull. 164: 229, 1965.

SPECIMEN NUMBER: \*\*CR-23.

TYPE OF ROT: White rot.

SUBSTRATE: On stump of caramacate; on bark of standing trunk and dead angiosperm (Larsen & Cobb-Pouille, 1990).

DISTRIBUTION: South America (Larsen & Cobb-Pouille, 1990).

*Phellinus robineae* (Murr.) Ames., Ann. Mycol. 11(3): 246, 1913.

SPECIMEN NUMBER: \*\*CR-11.

TYPE OF ROT: White rot.

SUBSTRATE: On living stem of caramacate. Primary host is *Robinia* sp., also *Acacia* sp., *Castanea* sp., *Juglans* sp., *Prosopis* sp., *Quercus* sp., and *Coccolobis* sp. (Larsen & Cobb-Pouille, 1990).

DISTRIBUTION: Trinidad and Venezuela, as *Fomes robiniae* (Dennis, 1970).

\**Phellinus robustus* (Karst.) Bourd. & Galz., Hym. France, 616, 1928.

SPECIMEN NUMBER: \*\*CR-41.

TYPE OF ROT: White rot.

SUBSTRATE: On stein of caramacate; on hardwood and softwood trees (Carranza-Morse, 1992).

DISTRIBUTION: North, Central, and South America, and Caribbean Islands (Carranza-Morse, 1992). Jamaica (Larsen & Cobb-Pouille, 1990).

*Phellinus sancti-georgii* (Pat.) Ryv., Norw. J. Bot. 19: 235, 1912.

SPECIMEN NUMBER: \*\*CR-38.

TYPE OF ROT: White rot.

SUBSTRATE: On living tree of caramacate; on deciduous wood (Larsen & Cobb-Pouille, 1990); on hardwood trees (Carranza-Morse, 1992).

DISTRIBUTION: Ecuador (Dennis, 1970). Central and South America, and Caribbean Islands (Carranza-Morse, 1992). Tropical America and Jamaica (Larsen & Cobb-Pouille, 1990).

*\*Pleurotus flavo-lanatus* (Berk. & Curtis) Sacc., Syll Fung. 5: 376, 1887.

SPECIMEN NUMBER: \*\*CR-66.

TYPE OF ROT: White rot.

SUBSTRATE: On stem of *Simaruba amara* Aubl. (cedro blanco); on dead heliconia (Dennis, 1970).

DISTRIBUTION: Trinidad (Dennis, 1970). Cuba, Central America (Saccardo, 1887).

*\*Pleurotus ostreatus* (Jacq.: Fr.) Kumm., Der Führer in die Pilz Kunds. 104, 1871.

SPECIMEN NUMBER: \*\*CR-34.

TYPE OF ROT: White rot.

SUBSTRATE: On trunk of dead mureillo.

DISTRIBUTION: Cosmopolitan (Singer, 1949).

*Podoscypha venustula* (Speg.) Reid, Nova Hedwigia, a monograph of the stipitate steroid

fungi. 18 p. 260, 1965.

SPECIMEN NUMBER: \*\*CR-06.

TYPE OF ROT: Brown rot?

SUBSTRATE: On fallen branches; on dead wood.

DISTRIBUTION: Venezuela, Panama as *Stereum flabellatum* Pat. (Dennis, 1970).

Amazonas state (Rogerson *et al.*, 1990). South America, Brazil, Guadalupe, Panama, Paraguay, Ecuador, Peru, and Venezuela (Reid, 1965).

*Polyporus arcularius* Batsch:Fr., Syst. Mycol. 1: 342, 1821.

SPECIMEN NUMBER: \*\*CR-68.

TYPE OF ROT: White rot.

SUBSTRATE: On branches of dead hardwood; on dead wood (Murrill, 1915;

Overholts, 1953) on compositae, Fagaceae, Lauraceae, Myrtaceae, Podocarpaceae, and Violaceae (Cunningham, 1965).

DISTRIBUTION: Bolivar state (Rogerson *et al.*, 1990). Trinidad (Dennis, 1970).

Mexico, Costa Rica, Jamaica, Cuba, and Florida (Murrill, 1915). Common in Brazil (Rick, 1960). Transcontinental (Gilbertson & Ryvardeen, 1987).

*Polyporus tricholoma* Mont., Ann. Sci. Nat. Ser. 2, 8: 365, 1837.

SPECIMEN NUMBER: CR-10

TYPE OF ROT: White rot.

SUBSTRATE: On dead wood of hardwood.

DISTRIBUTION: Trinidad, Venezuela, and Ecuador (Dennis, 1970). In Bolivar state (Rogerson *et al.*, 1990).

*\*Postia floriformis* (Qué1. in Bres.) Jülich, Persoonia, 11(4): 423, 1982.

SPECIMEN NUMBER: \*\*CR-23.

TYPE OF ROT: Brown rot.

SUBSTRATE: On dead hardwood; on dead conifers. Rare on hardwoods, but reported on *Acer* (Overholts, 1953); on bark and branches on the soil, usually on Fagaceae and Pinaceae (Cunningham, 1965); on dead hardwood and conifers (Gilbertson & Ryvardeen, 1987).

DISTRIBUTION: Eastern and western North America (Gilbertson & Ryvardeen, 1987).

*Pycnoporus sanguineus* (L.:Fr.) Murr., Bull. Torrey Bot. Club 31: 412, 1904.

SPECIMEN NUMBER: \*\*CR-35, CR-75, \*\*CR-92.

TYPE OF ROT: White rot.

SUBSTRATE: On unidentified hardwood; common on dead wood of *Pinus caribaea* var. *hondurensis*; frequently on rotted logs (Rick, 1960); on living trees (Rogerson *et al.*, 1990).

DISTRIBUTION: Widespread in Venezuela (Fidalgo, 1968). In Monagas, Bolivar, and Amazonas states (Rogerson *et al.*, 1990). Common, widely distributed in subtropical and tropical regions (Garcia & Stevenson, 1942). Common in South America (Gilbertson & Ryvarden, 1987).

*Rigidoporus lineatus* (Pers.) Ryv., Norw. J. Bot. 19: 236, 1972.

SPECIMEN NUMBER: \*\*CR-119, CR-14.

TYPE OF ROT: White rot.

SUBSTRATE: On trunk of *Simaruba cedron* Planch. (cedro amargo); on saprophyte and wound parasite of deciduous trees (Ryvarden & Johansen, 1980).

DISTRIBUTION: In El Limon, as *Microporus plumbens* (Sydow, 1930). *Polyporus zonalis*, Dennis (1970). *Polyporus zonalis*, Overholts in Chardon & Toro (1934). Widespread in the subtropical and tropical zones (Gilbertson & Ryvarden 1987).

*Rigidoporus microporus* (Fr.) Van Overeen, IC. Fung. Malay. 5:1, Tab. 5, 1924.

SPECIMEN NUMBER: \*\*CR-25.

TYPE OF ROT: White rot.

SUBSTRATE: On trunk of unidentified hardwood; common on hardwood (Van Overeen and Weese, 1924); frequent on dead wood (Murrill, 1915); on old electrical post (Spegazzini, 1926); on branches of hardwood (Cunningham, 1965).

DISTRIBUTION: Aragua and Miranda states (Fidalgo, 1968). Widely collected in Amazonas, Bolivar, and Delta Amacuro states (Rogerson *et al.*, 1990). Mexico (Saccardo, 1888; Murrill, 1915; Van Overeen & Weese, 1924; Cunningham, 1965). In Cuba and Puerto Rico (Murrill, 1915). In Argentina and Brazil (Spegazzini, 1965). In Costa Rica (Carranza & Saenz, 1984), In Antilles and Guiana (David & Rajchenberg, 1985). Widely distributed in tropics (Gilbertson & Ryvarden, 1987).

\**Rigidoporus umboncetipes* Rajchenberg., Mycotaxon 28(1): 111-118, 1987.

SPECIMEN NUMBER: CR-124.

TYPE OF ROT: White rot.

SUBSTRATE: On branch of unidentified hardwood; on *Pinus* sp., and *Salix humboldtiana* Auth. (Rajchenberg, 1987).

DISTRIBUTION: Tropical and subtropical areas (Rajchenberg, 1987).

*Rigidoporus vinctus* (Berk.) Ryv., Norway J. Bot. 19: 139, 1972.

SPECIMEN NUMBER: \*\*CR-09.

TYPE OF ROT: White rot.

SUBSTRATE: On trunk of dead *Alexa imperatricis* (Schomb.) Baill. (leche cochino).

DISTRIBUTION: Common in tropics (Lowe, 1966). In Antilles and Guiana (David & Rajchenberg, 1985). From subtropics (Farr *et al.*, 1989).

COMMENT: In Venezuela, common on dead and on rotting hardwood. In Barinas state (Valverde, 1982). In Distrito Federal (Setliff, 1984). *Poria carneophallens* Berk. (Fidalgo, 1968).



*Schizophyllum fasciatum* Pat., J. Bot. 1. 170, 1887.

SPECIMEN NUMBER: \*\*CR-96.

TYPE OF ROT: White rot.

SUBSTRATE: On log of algarrobo; on dead wood (Linder, 1933).

DISTRIBUTION: In Monagas state (Rogerson *et al.*, 1990). Aragua state (Dennis, 1970). Tropics (Linder, 1933).

*Tinctoporellus epimiltinus* (Berk. & Br.) Ryv., Trans. Br. Mycol. Soc. 73: 18, 1979.

SPECIMEN NUMBER: \*\*CR-55.

TYPE OF ROT: White rot.

SUBSTRATE: On trunk of carapa; on dead standing and fallen hardwoods (Gilbertson & Ryvardeen, 1987).

DISTRIBUTION: Trinidad, British Guiana, Venezuela, Colombia, and Panama as *Poria borbonica* (Dennis, 1970); *Poria borbonica* Pat. in Venezuela (Fidalgo, 1968). Pantropical (Gilbertson & Ryvardeen, 1987).

\**Trametes cervina* (Schw.) Bres., Ann. Mycol. 1: 81, 1903.

SPECIMEN NUMBER: \*\*CR-52.

TYPE OF ROT: White rot

SUBSTRATE: On stem of caramacate; on dead wood of numerous genera of hardwoods; rarely on conifers (Gilbertson & Ryvardeen, 1987).

DISTRIBUTION: Common in southwest of North America (Gilbertson & Ryvardeen, 1987).

*Trametes cubensis* (Mont.) Sacc., Syll. Fung. 9: 198, 1891.

SPECIMEN NUMBER: \*\*CR-90, \*\*CR-91, \*\*CR-96, \*\*CR-97, \*\*CR-126, \*\*CR-89, \*\*CR-103.

TYPE OF ROT: White rot.

SUBSTRATE: On trunk of unidentified hardwood, zapatero, and algarrobo; on dead hardwood in numerous genera (Gilbertson & Ryvardeen, 1987).

DISTRIBUTION: In Venezuela (Fidalgo, 1968). Aragua state, San Juan de Los Morros. Common in tropical America (Lloyd, 1915). In tropical America, south to Brazil (Gilbertson & Ryvardeen, 1986).

COMMENT: This is the first report of this species causing rot on hardwoods of economic importance — zapatero and algarrobo.

*Trametes elegans* (Spreng.:Fr.) Fr., Epicr. Syst. Mycol. p. 492, 1838.

SPECIMEN NUMBER: \*\*CR-01, \*\*CR-118, \*\*CR-63.

TYPE OF ROT: White rot.

SUBSTRATE: On trunk of dead leche cochino. *Andira inermis* and *Ficus tobagensis* (Fidalgo & Fidalgo, 1968); on hardwood (Farr *et al.*, 1989); on decorticated wood, Maranthaceae and Moraceae (Cunningham, 1965).

DISTRIBUTION: In Venezuela, Rancho Grande Aragua, and Miranda states (Fidalgo, 1968). In Barinas state, as pantropical species (Holmquist, 1972). In Bolivar state (Rogerson *et al.*, 1990). Pantropical, common in areas with seasonal drought where fruitbodies survive from one season to another (Ryvardeen & Johansen, 1980).

*Trametes membranacea* (Sw.:Fr.) Kreisel, Cs. Biol. Ser. 4, 16: 83, 1971.

SPECIMEN NUMBER: \*\*CR-125.

TYPE OF ROT: White rot.

SUBSTRATE: On log of *Enterolobium cyclocarpum* (Jacq.) Grise. (caracaro); on dead hardwood, rarely on conifers (Gilbertson & Ryvardeen, 1987).

DISTRIBUTION: Trinidad, British Guiana, Venezuela, as *Polysrictus membranaceus* (Dennis, 1970). Venezuela, in Aragua state as *Microporus membranaceus* (Sydow, 1930), Amazonas and Bolivar states (Rogerson *et al.*, 1990). French Antilles and Guiana (David & Rajchenberg, 1985). Widespread throughout tropical America to northern Argentina (Gilbertson & Ryvardeen, 1987).

*Trichaptum sector* (Ehremb.:Fr.) Kreisel, Cs. Ser. 4 Cs. Biol. 16: 84, 1971.

SPECIMEN NUMBER: \*\*CR-32.

TYPE OF ROT: White rot.

SUBSTRATE: On branch of caramacate; on dead hardwoods, rarely on conifers (Gilbertson & Ryvardeen, 1987).

DISTRIBUTION: Trinidad, British Guiana, Venezuela, Colombia and Ecuador, as *Polyporus sector* (Dennis, 1970). In Venezuela, as *Polysrictus sector* (Sydow, 1930; Dennis, 1965). In Aragua, Miranda, and Merida states and Distrito Federal as *Microporus sector* (Fidalgo, 1968a).

\**Tyromyces hydrophilus* (Berk. & Curtis) Lowe, Mycotaxon 2: 46, 1975.

SPECIMEN NUMBER: \*\*CR-139.

TYPE OF ROT: White rot.

SUBSTRATE: On trunk of cedro amargo; on deciduous wood (Ryvardeen & Johansen, 1980).

DISTRIBUTION: Cuba and British Honduras (Lowe, 1975).

#### ACKNOWLEDGMENTS

We thank Drs. O. Holmquist and K. K. Nakasone for their support during the progress of this work and Drs. R. T. Hanlin and A.L. Welden for constructive comments during preparation of the manuscript. The support of Ms. Rodríguez by the U.S.D.A. Forest Service Training Program on Tropical Wood is also appreciated.

#### LITERATURE CITED

- BURT, E.A. 1918. The Thelephoraceae of North America. X. *Annals Missouri Bot. Gard.* 5: 301-372.
- CARRANZA-MORSE, J. 1992. Pore fungi of Costa Rica. *Mycotaxon* 42: 351-369.
- CARRANZA-MORSE, J. & GILBERTSON, R.L. 1986. Taxonomy of the *Fomitopsis rosea* complex (Aphylophorales, Polyporaceae). *Mycotaxon* 25: 469-486.
- CARRANZA, J. & SAENZ, J. 1984. Wood decay fungi of Costa Rica. *Mycotaxon* 29: 151-166.
- CHARDON, C.E., & TORO, R.A. 1934. Mycological explorations of Venezuela. *Monogr. Univ. Puerto Rico*, B. 2. 353 pp.
- CORNER, E.J.H. 1981. The Agaric genera *Lentinus*, *Panus*, and *Pleurotus*. *Nova Hedwigia*, 69 J. Cramer. 169 pp.
- CUNNINGHAM, G.H. 1965. Polyporaceae of New Zealand. *Bull. N. Z. Dept. Sci. Industr. Res.* 164: 1-304.
- DAVID, A. & RAJCHENBERG, M. 1985. Pore fungi from French Antilles and Guiana. *Mycotaxon* 22: 285-325.

- DENNIS, R. 1965. Fungi Venezuelari: VII. Kew Bull. 19(2): 231–273.
- DENNIS, R. 1970. Fungus flora of Venezuela and adjacent countries. Kew Bull. Addit. Ser. 531 pp.
- DUNCAN, E. 1972. Microevolution in *Auricularia polytricha*. Mycologia 64: 394–404.
- FARR, D.F., BILLS, G.F., CHAMURIS, G.P., & ROSSMAN, A. 1989. Fungi on plants and plant products in the United States. APS Press, St. Paul, Minnesota. 1252pp.
- FIDALGO, O. 1968a. A preliminary enumeration of Venezuelan polyporaceae. Acta Biol. Ven. 6(2): 1–37.
- FIDALGO, M.E.P.K. 1968b. The genus *Hexagona*. Vol. II. Mem. New York Bot. Gard. 17(2): 35–108
- FIDALGO, O. & FIDALGO, M.E.P.K. 1967. Fenler's Venezuelan fungus collection. Acta Biol. Venezolana 5(12): 223–233.
- FIDALGO, O. & FIDALGO, M.E.P.K. 1968. Polyporaceae from Venezuela. Vol. I. Mem. New York Bot. Gard. 17(2): 1–34.
- GARCIA, G. & STEVENSON, J. 1942. La flora fungosa Peruana. Estación Experimental Agrícola de la Molina Peru. Peru.
- GILBERTSON, R.L. & RYVARDEN, L. 1986. North American Polypores. Vol. I. Fungiflora. Oslo, Norway. 433 pp.
- GILBERTSON, R.L. & RYVARDEN, L. 1987. North American Polypores. Vol. II. Fungiflora. Oslo, Norway. 452 pp.
- HOLMQUIST, O. 1972. On some Venezuelan polypores important in wood decay. State Univ. Coll. Environ. Sci. For. Syracuse Univ., Ph.D. Diss. 97 pp.
- LARSEN, M.J. & COBB-POULLE, L.A. 1990. *Phellinus* (Hymenochaetaceae). A survey of the world taxa. Fungiflora. Oslo, Norway. 206 pp.
- LINDER, D. 1933. The genus *Schizophyllum*. I. Species of the western hemisphere. Plate 33–36. Ann. J. 20. 552–564.
- LLOYD, G. 1915. Synopsis of the section Apus of the genus *Polyporus*. Mycological Writing 4: 289–392.
- LOWE, J. 1966. Polyporaceae of North America. The genus *Poria*. State Univ. College of Forestry at Syracuse Univ. 183 pp.
- LOWE, J. 1975. Polyporaceae of North America: The genus *Tyromyces*. Mycotaxon 2: 1–82.
- LOWY, B. 1952. The genus *Auricularia*. Mycologia 44: 656–692.
- LOWY, B. 1971. Tremellales. Flora Neotropica, Monograph No. 6. 153 pp.
- MC NABB, R.F.R. 1965. Taxonomic studies in the Dacrymycetaceae. N.Z. J. Bot. 3(2): 59–71.
- MURRILL, W.A. 1915. Tropical polypores. New York. 113 pp.
- OVERHOLTS, L. 1934. Hymenomycetes, p. 304–316. In C.E. Chardon and R.A. Toro. Mycological explorations of Venezuela. Monogr. Univ. Puerto Rico B. 2. 353 p.
- OVERHOLTS, L. 1953. Polyporaceae of the United States, Alaska, and Canada. University of Michigan press, Ann Arbor. 466 pp.
- PATOUILLARD, N. 1889a. Fragments mycologiques. Champignons extra-euroffens. J. Bot. (Paris) 3(10): 165–168.
- PATOUILLARD, N. 1889b. Fragments mycologiques. J. Bot. (Paris) 3(14): 256–259.
- PATOUILLARD, N. 1891. Quelques especes nouvelles de Champignons extraeuropeens. Rev. Mycol. (Toulouse) 13(51): 135–138.
- PATOUILLARD, N. 1927. Quelques Champignons du Venezuela. Bull. Soc. Mycol. Fr. 42(3-4): 289–294.
- PATOUILLARD, N. & GAILLARD, M.A. 1888. Champignons du Venezuela et principalement de la region du Haut-Orenoque, récoltes in 1887 por M. A. Gaillard. Bull. Soc. Mycol. Frances. 4(1): 7–46.

- PATOUILLARD, N. & HEIM, R. 1928. Champignons recueillis par Mayeul Grisol dans le Haut-Orenoque. *Ann. Crypt. Exot. Paris.* 1(3): 266–278.
- PEGLER, N.D. 1983. The genus *Lentinus*, a world monograph. *Kew Bull. Addit. Ser.* 9: 668 pp.
- RAJCHENBERG, M. 1987. New South American polypores. *Mycotaxon* 28(1): 111–118.
- REID, D.A. 1965. A monograph of the stipitate steroid fungi. *Beih. Nova Hedwigia.* 18: 1–381.
- REID, D.A., PEGLER, D.N., & SPOONER B.M. 1981. An annotated list of the fungi of the Galapagos Island. *Kew Bulletin* 35(4): 847–892.
- RICK, J. 1960. Basidiomycetes Eubasidii in Rio Grande de Sul. *Brasilia Heringia. Bot.* 7. Brasilia 193–295.
- RODRIGUEZ, C. 1992. Estudio etiologico de la pudrición del duramen en árboles de importancia forestal en el Lote Boscoso San Pedro. Edo. Bolivar. Venezuela. Universidad Centro Occidental Lisandro Alvarado. Tesis Master en Fitopatología. Barquisimeto, Edo. Lara. Venezuela. 288 pp.
- ROGERSON, C., HARRIS, R., & SAMUELS, G. 1990. Fungi collected by Bassett Maguire and collaborators in the Guyana Highland, 1944–1983. *Mem. New York Bot. Gard.* 64: 130–164.
- RYVARDEN, L. & JOHANSEN, I. 1980. A preliminary polypore flora of East Africa. *Fungiflora.* Oslo, Norway. 636 pp.
- RYVARDEN, L., WRIGHT, J., & RAJCHENBERG, M. 1982. *Megasporoporia*: A new genus of resupinate Polyporaceae. *Mycotaxon* 16(1): 172–182.
- SACCARDO, P. 1887. *Sylloge Fungorum.* V. Patavii. Vol. I. 1146 pp.
- SACCARDO, P. 1888. *Sylloge Fungorum.* VI. Patavii. Vol. II. 928 pp.
- SETLIFF, E.C. 1984. Flora neotropica. I. Some lignicolous polypores from Venezuela. *Mycotaxon* 19: 213–217.
- SINGER, R. 1951. "Agaricales" (mushrooms) in modern taxonomy. *Lilloa. Tucuman.* 22: 1–832.
- SPEGAZZINI, C. 1926. Observaciones y adiciones a la mycologia Argentina. *Academia Nacional de Ciencia* 27(3/4): 267–406.
- SYDOW, H. 1930. Fungi Venezuelani. *Ann. Mycol. (Berlin)* 28(1–2): 29–224.
- VALVERDE, L. 1982. Estudio anatomico de algunas especies de *Poria* spp. (Basidiomycetes Polyporaceae) de la reserva forestal Caparo. F.C.F. U.L.A. Mérida. Venezuela.
- VAN OVEREEN, C. & WEESE, J. 1924. Polyporaceae. Heft V. *Icones Fungorum Malayesium.* 1–5.
- WOLF, F.A. 1949. Notes on Venezuelan fungi. *Lloydia* 12(4): 208–219.

Table 1—Host/substrate index for Venezuelan collections

| Host/substrate  | Fungus   |
|---|--|
| <i>Diploporis purpurea</i><br>(congrío)                           | <i>Antrodia albida</i> , <i>Auricularia polytricha</i> ,<br><i>Gloeophyllum striatum</i>   |
| <i>Jacaranda capaia</i><br>(simaruba)                             | <i>Earliella scabrosa</i>  |
| <i>Hymenea courbaril</i><br>(algarrobo)                           | <i>Earliella scabrosa</i> , <i>Lentinus scleropus</i> , <i>Panus atrigellus</i> , <i>Schizophyllum fasciatum</i> , <i>Trametes cubensis</i>  |
| <i>Acacia</i> sp.   | <i>Hexagonia hydnoidea</i>   |
| <i>Piranhea rongepedunculata</i><br>(caramacate)                  | <i>Nothopanus hygropanus</i> , <i>Phellinus durissimus</i> ,<br><i>P. fastuosus</i> , <i>P. pactinatus</i> , <i>P. rhababarinus</i> ,<br><i>P. robineae</i> , <i>P. robustus</i> , <i>P. sancti-georgii</i> ,<br><i>Trametes cervina</i> , <i>Trichaptum sector</i>  |
| <i>Carapa guianensis</i><br>(carapa)                              | <i>Phellinus durissimus</i> ,<br><i>Tinetoporellus epimiltinus</i>   |
| <i>Libidiba coriaria</i><br>(dividive)                            | <i>Phellinus gilvus</i>  |
| <i>Euphorbia</i> sp.  | <i>Phellinus gilvus</i>  |
| <i>Sapium</i> sp.   | <i>Phellinus gilvus</i>  |
| <i>Simaruba amara</i><br>(cedro blanco)                           | <i>Pleurotus flavolanatus</i>  |
| <i>Erisma uncinatum</i><br>(mureillo)                             | <i>Pleurotus ostreatus</i>   |
| <i>Simaruba cedron</i><br>(cedro amargo)                          | <i>Rigidoporus lineatus</i> ,<br><i>Tyromyces hydrophilus</i>  |
| <i>Alexa imperatricis</i><br>(leche cochino)                      | <i>Rigidoporus vinctus</i> , <i>Trametes elegans</i>   |
| <i>Peltogyne porphyrocardia</i><br>(zapatero)                     | <i>Trametes cubensis</i>   |
| <i>Enterolobium cyclocarpum</i><br>(caracaro)                     | <i>Trametes membranacea</i>  |
| <i>Pinus caribaea</i> var.<br><i>hondurensis</i><br>(Pino caribe) | <i>Gloeophyllum striatum</i> ,<br><i>Pycnoporus sanguineus</i>   |
| Unidentified hardwood   | <i>Coriopsis caperata</i> , <i>Cyclomyces iodinus</i> ,<br><i>Dacryopinax indacocheae</i> , <i>D. spathularia</i> ,<br><i>Fomitopsis feei</i> , <i>Hymenochaete luteo-badia</i> ,<br><i>Megasporoporia setulosa</i> , <i>Microporellus obovatus</i> ,<br><i>Nigroporus durus</i> , <i>Podoscypha venustula</i> ,<br><i>Polyporus arcularius</i> , <i>P. tricholoma</i> ,<br><i>Postia floriformis</i> , <i>Pycnoporus sanguineus</i> ,<br><i>Rigidoporus microporus</i> , <i>R. umboncetipes</i> |

