Diversifying Tree Choices for a Shadier Future

Adam Black
Director, Peckerwood Garden
Hempstead TX

With special cameo appearance by Dr. David Creech

Dr. David Creech

Who is this guy?

- Former horticulturist at Kanapaha Botanial Gardens, Gainesville FL
- Managed Forest Pathology and Forest Entomology labs at University of Florida
- Former co-owner of Xenoflora LLC (rare plant mail-order nursery)
- Current Director of Peckerwood Garden, Hempstead, Texas

Tree Diversity in Landscapes

Advantages of diverse tree assemblages

- Include many plant families attracts biodiversity (pollinators, predators, etc) that all together reduce pest problems
- Diversity means loss is minimal if a new disease targets a particular genus.
- Generate excitement and improve aesthetics
- Use of locally adapted forms over mainstream selections from distant locations
- Adaptations for specific conditions (salt, alkalinity, etc)
- If mass plantings are necessary, use seed grown plants for genetic diversity rather than clonally propagated selections

Disadvantages of diverse tree assmeblages

- Hard to find among the standard issue trees available locally
- Hard to convince nurseries to try something new
- Initial trialing of new material, many failures among the winners
- A disadvantage in some cases – non-native counterparts may be superior to natives.

Diseases:

- Dutch Elm Disease (*Ulmus americana*)
- Emerald Ash Borer (*Fraxinus spp*.)
- Laurel Wilt (*Persea, Sassafras, Lindera,* etc)
- Crepe Myrtle Bark Scale (*Lagerstroemia spp*.)
- Next?

Quercus virginiana

Quercus fusiformis

About the cover for August 2011

ISSN: 0191-2917
e-ISSN: 1943-7692

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plant disease

Editor-in-Chief: Alison E. Robertson
Published by The American Phytopathological Society

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August 2011, Volume 95, Number 8
Page 1027
https://doi.org/10.1094/PDIS-02-11-0123

Disease Notes

First Report of *Diplodia corticola* Causing Branch Cankers on Live Oak (*Quercus virginiana*) in Florida

T. J. Dreaden, **K. Shin**, and **J. A. Smith**, School of Forest Resources and Conservation, University of Florida, Gainesville 32611

Open Access.

Numerous cankers on small branches showing dieback were observed on live oak (*Quercus virginiana*) trees in September 2010 in Marion County, FL. Approximately 24 12-year-old landscape trees planted on a farm displayed symptoms. Samples were collected from six of the symptomatic trees and returned to the laboratory for processing. Isolations were made from canker margins after surface sterilization of samples in 2.5% sodium hypochlorite and by plating on potato dextrose agar (PDA). A suspect Botryosphaeriaceae sp. (based on colony morphology) was consistently isolated from the symptomatic branches from all six trees sampled. Fungal colonies consisted of plentiful, white, aerial mycelium that turned dark olive after 5 to 7 days at 23°C with the underside of the cultures turning black (1). Total genomic DNA from three representative Botryosphaeriaceae sp. isolates was

About the cover for February 2014

ISSN: 0191-2917
e-ISSN: 1943-7692

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plant disease

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February 2014, Volume 98, Number 2
Page 282
https://doi.org/10.1094/PDIS-07-13-0736-PDN

Disease Notes

First Report of *Diplodia quercivora* Causing Shoot Dieback and Branch Cankers on Live Oak (*Quercus virginiana*) in the United States

T. J. Dreaden, **A. W. Black**, **S. Mullerin**, and **J. A. Smith**, School of Forest Resources and Conservation, University of Florida, Gainesville 32611

Open Access.

In September 2010, live oak (*Quercus virginiana* Mill.) trees in an Alachua County, FL, shopping center parking lot were observed with shoot dieback and cankers on small branches. Isolations were made from canker margins by surface sterilizing tissue in 2.5% sodium hypochlorite and plating on potato dextrose agar (PDA) and incubating at 23°C. Fungi morphologically similar to *Diplodia quercivora* Linaldeddu & A.J.L. Phillips (mycelium initially velvety and white and later turning pale to dark olivaceous and grayish in reverse) were consistently isolated from symptomatic tissue (2). The two loci used by Linaldeddu et al. (2) in the description of *D. quercivora* were sequenced to identify a representative isolate (PL1345) as *D. quercivora*. The internal transcribed spacer (ITS) (GenBank Accession No. KF386635) and translation factor 1-alpha (EF-1α) (KF386636) regions were amplified and sequenced using primers ITS1F/ITS4 (3) and EF1-728F/EF1-986R (1)

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Quercus fusiformis
Weeping form

Quercus virginiana
'Grandview Gold'

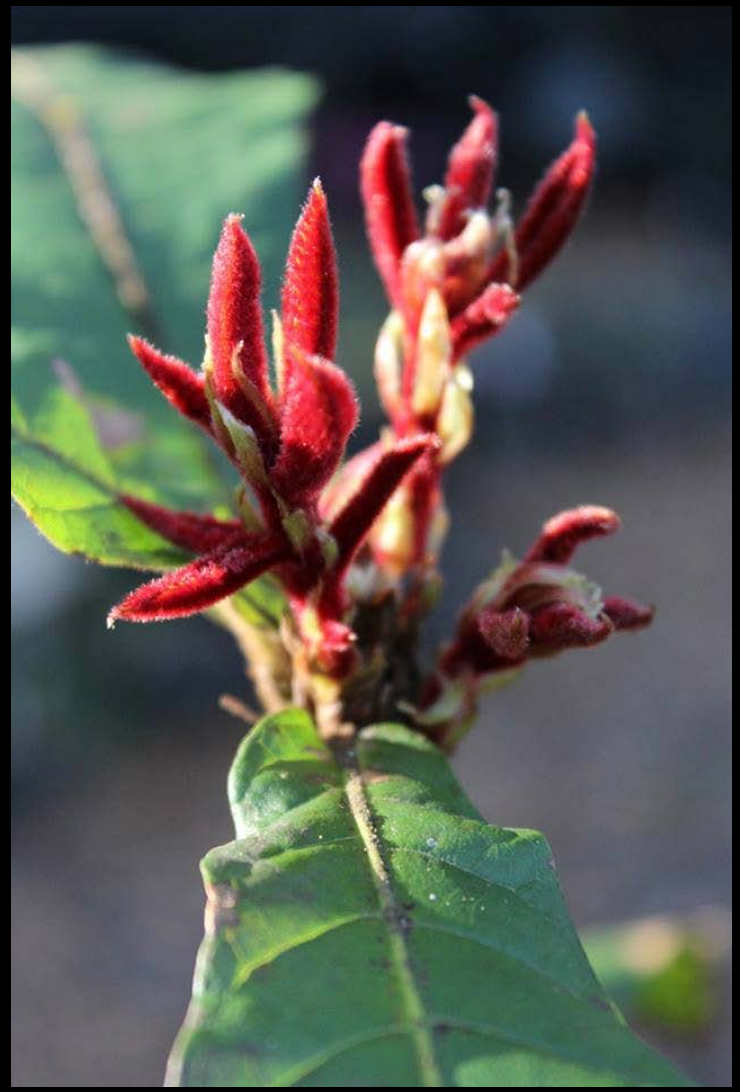
Quercus nigr
Variegated

Quercus tarahumara

Quercus crassifolia

Quercus sp. San Carlos Mtns

Quercus tarahumara



Quercus laeta

Quercus polymorpha



Quercus germ

There is one in the auction!

Quercus rysophylla



Quercus sinuata var. sinuata

Quercus imbricaria (southern forms)

Quercus glauca

Quercus acutus

Quercus schottkyana

Quercus marlipoensis

Lithocarpus edulis ‘Starburst’

Lithocarpus henryi

Lithocarpus kawakamii

Platanus rzedowski

incorrectly offered as *P. mexicana*
No true *P. mexicana* in cultivation!!!!!!

Ulmus alata ‘Lace Parasol’

Sapindus sp.

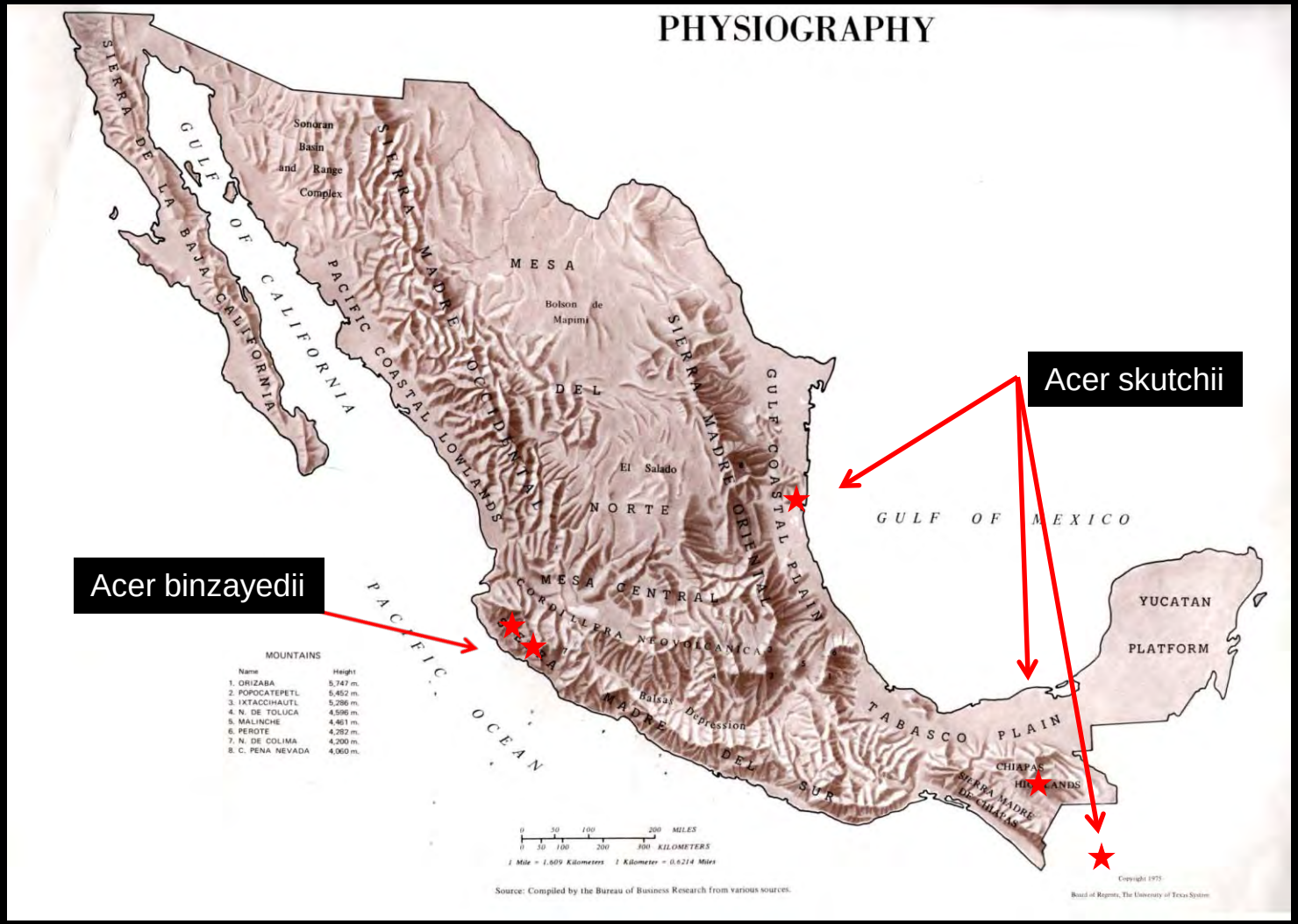
Amelanchier denticulata
Evergreen Mexican Serviceberry

There is one in the silent auction from me

Prunus x ‘Purple Pride’
Chance purple seedling of native Prunus angustifolia ‘Guthrie’ x ????

There is one from Dr. Creech in the auction!

Acer grandidentatum (Mexican provenance)


PHYSIOGRAPHY
Acer skutchii
Acer binzayedii
SIERRA DE LA BAJA CALIFORNIA
GULF OF CALIFORNIA
Sonoran Basin and Range Complex
SIERRA MADRE OCCIDENTAL
PACIFIC COASTAL LOWLANDS
MESA DEL NORTE
Bolson de Mapimi
El Salado
SIERRA MADRE ORIENTAL
GULF COASTAL PLAIN
GULF OF MEXICO
MESA CENTRAL
CORDILLERA NEOVOLCANICA
SIERRA MADRE DEL SUR
Balsas Depression
PACIFIC OCEAN
TABASCO PLAIN
YUCATAN PLATFORM
CHIAPAS HIGHLANDS
SIERRA MADRE DE CHIAPAS
MOUNTAINS
Name Height
1. ORIZABA 5,747 m.
2. POPOCATEPETL 5,452 m.
3. IXTACCIHAUTL 5,286 m.
4. N. DE TOLUCA 4,596 m.
5. MALINCHE 4,461 m.
6. PEROTE 4,282 m.
7. N. DE COLIMA 4,200 m.
8. C. PENA NEVADA 4,060 m.
0 50 100 200 MILES
0 50 100 200 300 KILOMETERS
1 Mile = 1.609 Kilometers 1 Kilometer = 0.6214 Miles
Source: Compiled by the Bureau of Business Research from various sources.
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Mahonia chochoca

Pterocarya stenoptera

Bischofia polycarpa

Celtis choseniana

Celtis julianae

Celtis sinensis ‘Green Cascade’

Populus deltoides
‘Purple Tower’
(aka ‘Fuego’)

Populus monticola

Cinnamomum chekia

"You can kiss your ash goodbye"

Fraxinus cuspidata

Fraxinus greggii

Fraxinus greggii var. num

Fraxinus greggii var. greg

Fraxinus sp.
from Hildago, Mexico

Platycladus orientalis
Filiformis Pendula Complex

Cunninghamia konishii ‘ABG Blue’

Cunninghamia konishii ‘ABG Blue’

Cunninghami konishii (Bilyu Sacred Tree, Taiwan)

Cupressus arizonica

Cupressus arizonica ‘Sulphurea’

C. arizonica ‘Chapparal’ and ‘Limelight’

Cupressus arizonica ‘Raywood Weeping’

Cupressus chengiana

Fokienia (Chamaecyparis) hodginsii

Platycladus orientalis ‘Filifera Pendula’ complex

Platycladus orientalis

Cupressus x ovensii (C. nootkatensis x C. lusitanica)

Taiwania cryptomerioides

Taxodium

Taxodium distichum ‘Cascade Falls’

Taxodium distichum ‘Twisted Logic’

Taxodium mucronatum ‘Sentido’

Taxodium ‘Dongfengshan’

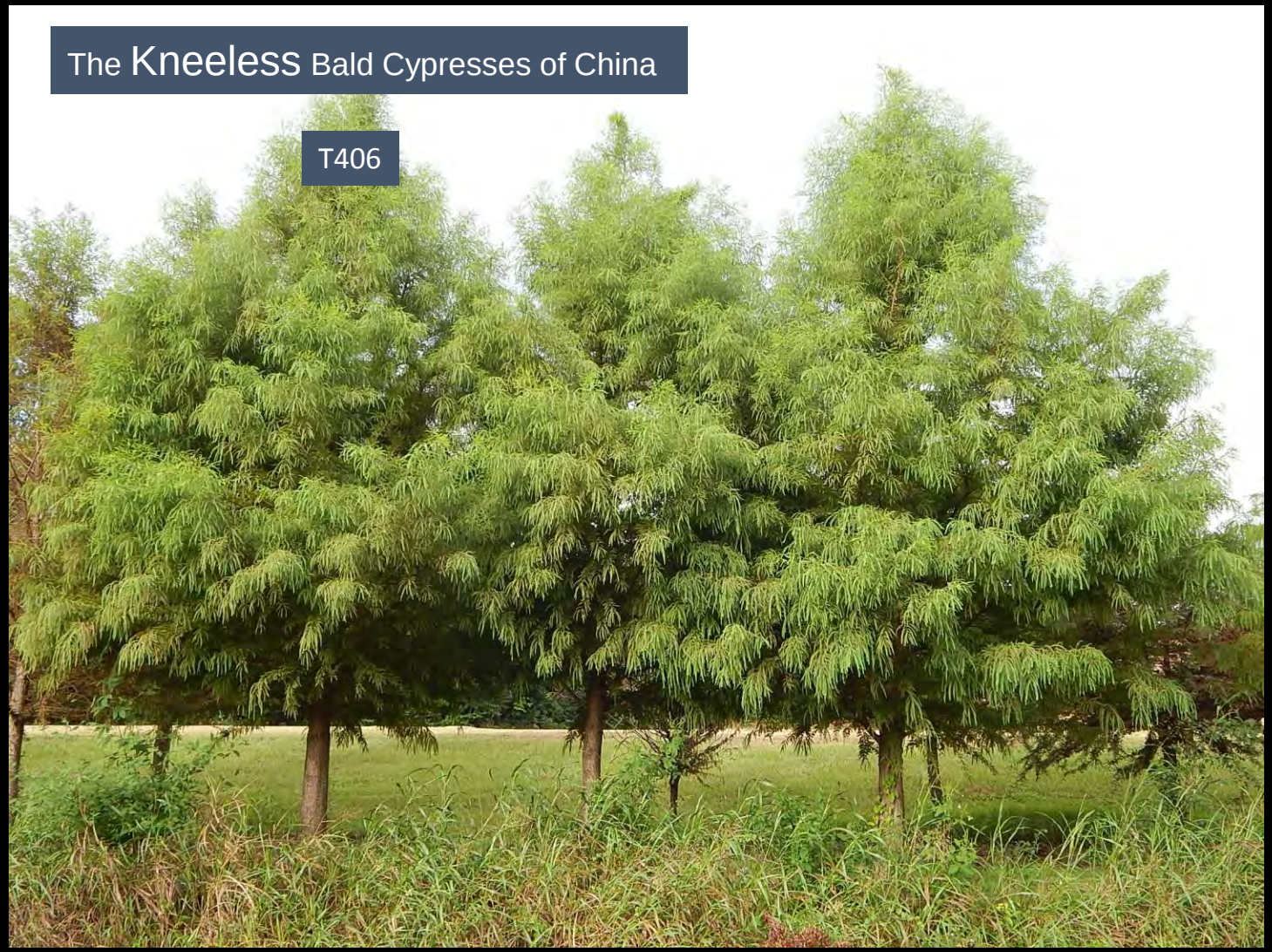
Taxodium disthichum ‘Jim’s Little Guy’

Be sure to bid tons of money for the plant I provided for the auction

Creech’s collaborator, Professor Yin Yunlong, Nanjing Botanical Garden

The Kneeless Bald Cypresses of China

T406

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Kiev
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Ural Mtns
Perm
Yekaterinburg
RUSSIA
Samara
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Volgograd
Black Sea
Omsk
Krasnoyarsk
Novosibirsk
Lake Baikal
Irkutsk
Ulan Ude
Sakalin
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KAZAKHSTAN
Baku
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Qingdao
S. KOREA
Fukuoka
Kyushu
Cheju
Yellow Sea
Shiraz
AFGHAN-ISTAN
Kabul
Lanzhou
Xi'an
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Palawan
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Andaman Islands
Ho Chi Minh City


Ninghai China


405
406

Metasequoia glyptostroboides

Metasequoia glyptostroboides ‘Silhouette’

Podocarpus macrophyllus

P. macrophyllus ‘Sunshine Spire’ (there is one in the auction!)

P. macrophyllu
‘Aureus’ and
‘Golden Crow

Podocarpus macrophy
‘Royal Flush’ aka ‘Akan

There’s one in the auc

P. macrophyllus ‘Kanapaha Red’

P. macrophyllus at Avery Island, LA

Podocarpus fasciculus

Podocarpus nakaii

Podocarpus matudae

Pinus krempfii

Keteleeria davidiana

Keteleeria davidiana

Keteleeria fortunei

Keteleeria evelyniana

Keteleeria sp. ‘Bartlett Blue’

Cathaya agryrophylla

Amentotaxus formosana

Amentotaxus hatuyensis

Amentotaxus catha

Thanks!

Come see us at Peckerwood Garden
Hempstead TX (Just northwest of Houston)

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